COLONY OF MAURITIUS

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ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1930

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COLONY OF MAURITIUS

DEPARTMENT OF AGRICULTURE

ANNUAL REPORT FOR 1930

No. 26/31

THE HONOURABLE THE COLONIAL SECRETARY.

I have the honour to submit the report on the Department of Agriculture and on the agricultural conditions in the Colony for the year 1930.

PART I

GENERAL REPORT ON AGRICULTURAL CONDITIONS AND WORK OF DEPARTMENT OF AGRICULTURE

AGRICULTURAL CONDITIONS IN 1930

The weather conditions experienced during the growing and harvesting seasons are exemplified in the following tabular statement. It will be noticed that in almost every month the temperature was below normal and that for the first eight months of the year the rainfall was below average. Weather conditions were thus, generally, unfavourable and the production of sugar markedly below average. The damage caused to the 1930 crop by the erosion and leaching of the soil following the extraordinary rainfall of December 1929 was considerable. Such losses are very much more serious than is generally realised.

STATION—DEPARTMENT OF AGRICULTURE,—REDUIT.

Months and Year	*Air Temperature* °C	*Departure from average* °C	*Rainfall* mm	*Departure from average* %
1929				
November	21.8	+ 0.2	12.2*	− 63
December	22.9	− 0.4	760.0	+ 455
1930				
January	23.2	− 0.8	242.3	− 5
February	23.6	− 0.8	178.4	− 35
March	22.8	− 0.8	98.2	− 68
April	21.8	− 0.7	53.4	− 51
May	20.2	− 0.3	52.8	− 47
June	17.9	− 0.4	51.4	− 41
July	17.9	0.0	43.9	− 38
August	17.1	− 0.7	43.8	− 18
September	19.1	+ 0.5	52.1	+ 12
October	19.7	0.0	60.7	+ 21
November	21.5	− 0.1	66.5	+ 26
December	23.3	0.0	162.8	+ 19

THE SUGAR INDUSTRY

The total production for 1930 was 220.96 thousand tons as compared with an average crop of 228.65 thousand for the past five years. Field returns were especially low in the north of the Island, where the drought was most severe: the reduction observed there approximated to 25% on the previous year. This reduction in the north was most marked on the lands of small Indian planters where no irrigation water was available, the yields in many cases being as low as 5 to 6 tons of cane per acre.

The extraction of sugar per cent of cane in 1930 was the highest on record, being 10.92%.

* Gauge overflowed.

The following figures compiled from factory returns give the production for each district of the Island, as compared with the production figures for the five years preceding.

Districts	1930	1929	1928	1927	1926	1925
Pamplemousses & R. du Rempart	43.00	54.68	59.55	52.72	44.15	51.86
Flacq ...	37.81	38.91	41.17	33.21	26.02	43.06
Moka ...	32.10	35.97	34.76	30.88	31.27	34.68
Plaines Wilhems ...	14.62	15.66	16.40	15.06	17.14	18.18
Black River ...	9.81	9.22	9.72	9.03	7.18	8.66
Savanne ...	37.09	36.41	41.41	35.88	35.13	39.72
Grand Port ...	46.53	47.18	50.42	41.22	31.70	45.06
Total ...	220.96	238.03	253.43	218.00	192.59	241.22

Grades of sugar produced.—Owing to the altered conditions of the market, local manufacturers are producing an increasingly large proportion of so called raw sugars of 98½° polarisation. The following table illustrates the enormous change which has taken place in the industry during the past five years owing to the alteration in the English tariffs which penalise sugars of over 99° polarisation.

Years	*%Vesou*	*%Raws*	*Years*	*%Vesou*	*%Raws*
1921 ...	95.98 ...	...	1926...	98.10 ...	...
1922 ...	97.20 ...	...	1927...	98.63 ...	...
1923 ...	97.61 ...	...	1928...	71.80 ...	27.30
1924 ...	98.34 ...	...	1929...	23.90 ...	75.20
1925 ...	98.21 ...	...	1930...	16.80 ...	82.50

Area under cultivation.—As a result of the first Agricultural Census taken in Mauritius during 1930 in connection with the World's Agricultural Census the total area under cane cultivation in the Island was found to be 137,182 acres. Of this area, estates with factory attached cultivated 48,525 acres; estates without factory 38,833 and small planters on or off estates 49,824 acres. Of the total cane grown by small planters on and off estates, Indian planters grew 42,576 acres. Indian estate cultivation occupied 10,164 acres, bringing the total Indian cultivation up to 52,740 acres or 38.5% of the total cane area of the Colony. The Indian cane lands produced only about 28% of the total crop.

These figures indicate an apparent decrease of about 19,000 acres on the total area under cane and of 16,000 acres in the area cultivated by Indians. It should be stated, however, that this decrease is not entirely real as in the past the figure for area under cane off estates was roughly calculated from the admittedly uncertain figures given by factories estimated from the amount of cane received from small planters.

Disposal of the sugar crop.—As in previous years, the bulk of the production went to the United Kingdom. The Mauritius Sugar Syndicate continued operations on the same lines as heretofore, controlling about 80% of the sugar production of the Colony.

The market for sugar in 1930 was the lowest on record, the average net price to the planter per 50 kilos being approximately Rs. 6.08, as compared with Rs. 7.50 last year.

Conditions affecting the Sugar Industry in 1930.—Owing to the condition of the sugar market the whole industry of the Colony has been placed in a very precarious position. The late Sir Francis Watts delegated by the Imperial Government to investigate matters in 1929 recommended in his report* that "the Imperial Government should be invited to make grants-in-aid to the Colony calculated to make good the losses which have been incurred after all reasonable efforts have been made by those engaged in the industry." It was further suggested by Sir Francis Watts that the grant to be made in any one year should be equal to the loss calculated to have been sustained in the previous year and that such assistance should be continued for a period of not less than 5 years. It was calculated at the time when the report was written (December 1929) that when sugar was selling at below Rs. 8.98 per cwt. f.o.b. Mauritius, the sugar industry was being conducted at a loss.

The recommendations made in the Watts' report were not carried out, but a certain measure of relief was granted locally in the shape of (1) a reduction in the export duties levied on sugar from 75 cents to 9 cents per 100 kilos and (2) a grant-in-aid from the Mauritius Improvement and Development Fund to the extent of £1 per ton of sugar produced, the grant to be repaid over a period of 30 years. The special export duty to be levied for the recovery of this 1930 loan has not yet been imposed. The export duties remitted for 1930 as mentioned above were as follows:—

i. Customs Export Duties (Ordinance 2 of 1920) (including 2 cents for Phytalus Campaign) 32 cents per 100 kilos reduced to 2 cents per 100 kilos.

* Report on the Mauritius Sugar Industry—Cmd. 3518. Published 1930.

ii. Repayment of Loans (Ordinance 15 of 1929), 36 cents per 100 kilos, remitted in full.

Labour Conditions.—The number of male agricultural labourers out of a total population of approximately 400,000 is estimated as between 70 to 72 thousands but no accurate figures will be available until after the 1931 Census. In 1921 the figure was 69,034. Day labourers, usually on " task work " receive 70 cents to 80 cents per day during the inter-crop season and 75 cents to R. 1.25 during the crop season. The pay of female labourers is 40 to 50 cents per diem. The number of labourers engaged by estates on monthly contracts is steadily decreasing. Such labourers usually receive Rs. 10 per month, together with free lodgings, medical attendance and a generous rice ration in all equivalent to Rs. 25 per month. In this connection it is interesting to note the falling off in rice consumption per caput during the last six years as shown in the following table calculated from the Rice Import figures given in the Annual Blue Book :—

1925	...	156 kilos per annum
1926	...	133 ,, ,,
1927	...	149 ,, ,,
1928	...	158 ,, ,,
1929	...	136 ,, ,,
1930	...	128 ,, ,,

In 1898 the rice consumed per caput amounted to 191 kilos.

This falling off in rice consumption shown above may be due to an increase in the use of such foods as bread, maize, manioc, etc., or it may be due to the fact that owing to bad times, day-labourers are under-feeding themselves.

Mechanical Cultivation.—Tractors and ploughs to the value of Rs. 27,231 (c.i.f.) were imported. The number of farm tractors in operation on estates in 1930 was 101. Tramway material to the value of Rs. 232,139 was imported during the year.

Insect Pests of Sugar cane.—The major pest of the Island, Phytalus Smithi, is steadily spreading ahead of its parasites. In spite of the mechanical and biological control measures applied, the pest is increasing in numbers year by year and causing considerable concern as new areas become infested. The number captured during 1929–30 totalled 265 millions, an increase of 13 millions on the previous year, while the amount spent by the Department of Agriculture alone on control operations amounted to Rs. 112,400.

Much harm has been done during the year by the indiscriminate capture and sale by untrained persons of the natural enemy, Tiphia parallela. It is calculated that at least a million insects were thus captured and sold during the year and as the mortality due to unskilled methods of capture was excessive, great harm has been done. Legislation is being passed to check this evil.

At the suggestion of the late Sir Francis Watts, a memorandum summarising the position in relation to the Phytalus problem in Mauritius was prepared by this Department for forwarding to Dr Myers of the Imperial Institute of Entomology with the object of ascertaining his views on the problem.

Details of other pests attacking cane during the year are given in the Report of the Entomological Division appended.

Cane Diseases.—Leaf Scald and Gumming Disease continued to be the most serious diseases in the Island, the position being aggravated by the fact that a large proportion of the cane lands are under the variety Big Tanna, which is proving particularly susceptible to Leaf Scald. This state of affairs can only be satisfactorily solved by the production of disease resistant seedlings and this is the chief concern of the Sugarcane Research Station at the present time. Figures obtained from disease surveys conducted at cane carriers as the cane arrive at the factories show that the combined figure for the incidence of the two diseases, Scald and Gumming, was 16.8% in 1930.

As a result of Mr. Ashby's report on the cane disease situation in Mauritius Mr. Shepherd, the Botanist and Mycologist, left for Australia in October in order to study the work of control being conducted in New South Wales by D. S. North of the Colonial Sugar Refining Company and by the staff of the Bureau of Sugar Experiment Stations, Queensland. Mr. Shepherd will return to Mauritius via Java where he will have further opportunities of studying disease control measures.

The subject of cane diseases is dealt with fully in the report of the Mycological Division appended.

IRRIGATION

A series of irrigation experiments was carried out by the Irrigation Officer on five estates on the north of the Island and on one estate in the Black River area to demonstrate the more economical short-row method of irrigating canes as carried out in Hawaii. The Midlands irrigation scheme for irrigating part of the cane lands in the north of the Island has not yet been completed.

As on previous occasions La Ferme Reservoir dried and ceased to supply water during the dry season at the close of the year, thereby causing a considerable set back to irrigated canes in the Black River area drawing from this supply.

SUBSIDIARY AGRICULTURAL INDUSTRIES

Mauritius Hemp Industry.—The quantity of this fibre (Fourcroya sp.) exported during the year was 1,464 tons of a value of Rs. 347,000 as compared with an export of 2,500 tons of a value of Rs. 900,000 in 1929. The decrease in exports has been brought about chiefly by the continual fall in prices which dropped from Rs. 386 per ton f.o.b. in January to Rs. 276 in December. The consequences have been the temporary closing down of many factories and the discharge of some hundreds of workers.

The late Sir Francis Watts in an Appendix to his Report on The Sugar Industry of Mauritius pointed out that the fibre producers and shippers did not appear to fully understand the exact purposes for which Mauritius Hemp was used. This state of affairs was remedied in 1930 by the visit of Mr. F. Lincoln of the Mauritius Hemp Producers' Syndicate to Europe where he investigated the problems of disposal and manufacture.

Mauritius Hemp is for the most part sold through London for manufacture in Belgium where it is used in the manufacture of ropes, binder-twine, etc. The fibre is not put on the market in such a finished condition as Java Cantala, so that prices suffer in consequence. Steps are being taken in an attempt to remedy this defect, and an officer of this Department, now in Java, has been instructed to study the Java industry.

A subsidiary industry of considerable promise is likely to be built up in the near future, as plans have been made for establishing a bag factory on the Island, using low-grade Fourcroya fibre as the raw material. Sugar bags to the value of Rs. 1,900,000 were imported into the Colony from India in 1929. Our annual requirements are of the order of3,000,000 bags.

Tobacco Industry.—Increased interest was shown in this crop during the year, the acreage registered being 3,057 acres as against 2,681 and 1,597 in 1929 and 1928 respectively. The crop was estimated to be 525,000 kilos of which 426,951 kilos were purchased by local manufacturers, as against 450,000 kilos and 408,394 kilos in 1929 and 1928 respectively. The amount of local leaf used in manufacture was 261,852 kilos as against 270,792 in 1929 and the total amount of manufactured tobacco produced 235,885 kilos as against 251,050 kilos in 1929. Imports of tobacco showed further decreases in all types with the exception of cigars and cigarettes which showed an increase of 4,735 kilos. Revenue from tobacco showed an increase of Rs. 159,945, the highest figure recorded since 1927. Imports of leaf from Rodrigues were lower than in the previous year by 5,902 kilos.

Variety trials and manurial experiments were conducted during the year, but a severe outbreak of Granville Wilt disease vitiated the results. Selected hybridised strains were tested in the field but the results did not justify further work with these strains. Turkish tobacco which was under further trial suffered heavily from mildew so that the majority of plants produced only worthless leaf.

Officers of the Division paid 5,000 visits to planters and travelling to the extent of 20,000 miles was entailed. Fifty one planters were prosecuted for non registration of plantations and for cultivating ratoons. Fines amounting to Rs. 700 were imposed.

The Tobacco Production and Marketing Ordinance was passed by the Council of Government during the year, the object of this Ordinance being to establish a Government Tobacco Board which will have powers to control the production and sale of all leaf in the Colony. For this purpose a central warehouse is to be opened and the cultivation of tobacco only allowed under licence from the Board. This Ordinance will come into force on a date to be fixed by Proclamation.

Fruit Canning and Preserving.—The fitting of the factory of the newly formed Mauritius Pineapple and Canning Company had not been completed before the end of the year so that great difficulty was experienced by growers in disposing of their crops which had been planted in anticipation of the opening of the factory. It is anticipated that the factory when completed will have a capacity for turning out 10,000 cans of pines per 8 hour day.

The area under pineapples at the end of the year was estimated at 260 acres only.

Three firms were engaged in the production of canned and preserved goods during the year.

Oil Crops.—The area under oil crops in the Island only amounted to 800 acres, i.e. coconuts 700 acres and ground-nuts 100 acres. The Innova Refinery continued operations during the year, manipulating 400 tons of copra and 58 tons of ground-nuts, while 30 tons of soap was manufactured.

The coconut-oil and copra market in the Oil Island Dependencies was in a very depressed condition, owing to the low prices ruling. Considerable stocks are still on hand unsold.

The exports of copra and coconut oil amounted to 1,734 tons and 14,450 litres respectively.

Food Crops.—Owing to the continual fall in sugar prices and the resulting reduced purchasing power of the population, an effort has been made to encourage food production amongst small Indian planters particularly in regard to rice. This effort has been aided by the erection, by a private individual, of a small rice-mill in Port-Louis with a capacity of 2 tons of paddy per diem. In 1929, the area under hill rice was only 30 acres. In December 1930 it was estimated that approximately 300 acres of hill rice had been planted from seed

supplied by the Department of Agriculture. This should form a good nucleus for further expansion. While it is felt that Mauritius will never be in a position to supply a tithe of the 50,000 tons of rice consumed annually in the Island, yet the financial situation demands that small-holders should attempt to feed themselves until such time as conditions in the sugar industry improve.

As little information was available regarding the requirements of rice locally, three experiments were laid down at the Central Experiment Station and Barkly Gardens in November 1930 to test (1) the optimum date for planting and (2) the optimum spacing distances. Each "treatment" was replicated at least four times, there being a standard plot on either side of each "treatment."

One of the chief difficulties met with by this Department in encouraging food production, apart from the lack of a food growing tradition, is the reluctance of the East Indian, who forms the bulk of the population, to eat any staple food other than rice. Such crops as maize, yams, manioc and sweet potatoes, which thrive locally very much better than rice, are not generally appreciated and are only eaten in small quantities.

Seed of various types of dholl is being imported by the Department for trial as this crop, for no good reason, is not grown locally. The average annual import of dholl for the past five years amounted to 3,683 tons of an average annual value of Rs. 748,400.

The acreage of all food crops in 1930 was estimated to be as follows :—Vegetables 3,300, Manioc 1,600, Maize 1,300, Rice 300, Potatoes 200, Sweet potatoes 160 and Ground nuts 100. These figures are remarkably low when it is considered that the population of the Island is 400,000 approximately.

Alcohol.—According to Excise figures, the number of litres of alcohol distilled in 1929–30 (July to June) was 908,241 as compared with an average of 707,519 litres for the past five years.

During the year under review, two officers of the Department sat as members of a Comittee formed by Government to report on the modification of the liquor regulations.

Tea.—As the result of recommendations made by the late Sir Francis Watts, the Secretary of State approved of the visit to Mauritius of Commander Goolden of the Anglo-Ceylon and General Estates Company Limited to report on the development of tea cultivation in the Island. Commander Goolden arrived in Mauritius from Colombo on the 20th November and left the Colony on the 13th December.

This gentleman's report will be submitted after the Mauritius teas taken by him to Ceylon for treatment and examination have been reported upon.

There are only three gardens in the Colony, their total production in 1930 being 19,000 kilos. Imports of tea from abroad amounted to 177,274 kilos, valued at Rs. 319,510 c.i.f.

LIVESTOCK

Cattle.—The total number of bullocks for slaughter imported from Madagascar during the year was 4,843 of a total c.i.f. value of 301,500 rupees. The average figure for the previous five years was 7,258, the fall in 1930 being due to the decreased buying powers of the general population due to the long continued slump in the sugar industry. These Madagascar animals are sold to local butchers at from Rs. 80 to Rs. 100 per head according to condition. Locally bred bullocks which are considerably larger in size fetch higher prices. In addition to imports from Madagascar 246 bullocks for slaughter were imported from Rodrigues. The total number of bovines in the Island in 1930 was 31,869 as compared with 44,339 in the year 1921. This decrease is almost entirely due to the falling off in the number of draft oxen used on estates. The general condition of animals during the year was good. Estate managers using the Bourgault Fly Trap are unanimous in declaring that their cattle have improved in condition remarkably since using this device which is very effective in capturing the blood-sucking Stomoxys. A sum of Rs. 4,433 was earmarked in the 1930 Estimates for subsidizing the cattle industry, the arrangement being that Government pay half the cost of pure bred animals imported for breeding purposes provided that previous sanction for importation is obtained. A sum of Rs. 1,035 only was claimed for importations made during the year.

Equines.—The total number of equines in the Island is only 1,460 as compared with 2,400 in 1921.

Sheep, Pigs and Goats.—The number of these animals in the Colony in 1930 amounted to 1,230, 1,926 and 4,791 respectively compared with 1,501, 3,586 and 6,226 in 1921. The following were imported from Rodrigues during the year : sheep 409, pigs 1,353 and goats 1,662.

Government Dairy.—During the year under review the Government Dairy at Curepipe supplied 51,000 litres of milk to Government Hospitals and 38,000 litres to the general public. This milk was sold at 25 cents per litre.

RESEARCH

General.—The several divisions of the Department continued with their various lines of research during the year, but as the various officers concerned have teaching and advisory duties to perform, the time given to research cannot be great. The officers of the newly formed Sugarcane Research Station will not be so handicapped.

Sugarcane Research Station.—This Station, opened on the 15th of January 1930, has been formed with the object of attacking the more pressing problem connected with the genetics, physiology and bio-chemistry of the sugar cane in Mauritius, the most urgent problem in hand being the research for a new cane variety to replace the Big Tanna which is now falling after a period of 30 years supremacy in the Island, the average yield of cane per acre for the whole Island in 1929 being only 18.05 tons.

The laboratories of this new Station are situated in the building of the Mauritius Agricultural College at Réduit, while the field work is carried out on the experimental stations of the Department of Agriculture at Réduit and Pamplemousses and on various estates throughout the Island. The time is not far distant however when more suitable land in proximity to the Station will have to be obtained, as most of the land now available is unsuitable for various reasons, chief of which is the unequal cropping to which it has been subjected in the past, so that soil conditions are extremely variable.

The establishment of this Station provides for (1) the Senior Geneticist in charge, (2) a Bio-Chemist and (3) a Physiological Botanist* together with three Scientific Assistants. In addition to this staff, Mr. A. de Sornay, Cane Breeding Officer of the Department of Agriculture, has been attached to the Station to work under the Senior Geneticist. These officers are to be whole-time research officers and will not be given teaching duties, etc...

Half of the annual recurrent expenditure of this Station up to a maximum of £ 2,000 per annum for a period of five years is being met by a grant from the Empire Marketing Board.

The work of the Sugarcane Research Station for the year 1930 forms the subject of a separate report.

AGRICULTURAL EDUCATION

College of Agriculture.—Five Students qualified for their Diploma during the year.

Since the College opened in 1923, 26 students have qualified for the Diploma of whom 24 are now occupying various posts, the remaining 2 being out of employment. This problem of unemployment is one that must be closely watched and the number of graduates limited as far as possible to the needs of the Colony as the prospects of employment elsewhere are small.

The affairs of the College of Agriculture are dealt with in a separate report.

Farm School.—In addition to the College of Agriculture, training in agriculture was also given at the Farm School where 15 students were in attendance during the year, nine in the first year and six in the second year. The course which is elementary, covers a period of two years after which time the best boys usually find openings in this Department or on Estates. The standard of education of the numerous candidates applying for admission to this School was distressingly low and their mental attitude towards agriculture one that does not augur well for the future. It can be said that the average candidate showed not the slightest knowledge of, or interest in, the major industry of his country.

School Gardens.—The total number of School Gardens now registered is twenty-eight. These were regularly inspected by officers of this Department during the year and advice given for their proper cultivation.

CO-OPERATIVE CREDIT SOCIETIES

The total number of Societies in operation in the Island in 1930 was 29 with a total membership of 2,420, the total share capital originally contributed being Rs. 83,875. Advances amounting to Rs. 2,500, were made by Government to Societies during the year, and advances totalling Rs. 2,310 repaid to Government by Societies. The total amount of advances still due to Government by Societies on 31st December 1930 was Rs. 5,350.

The work of these Societies forms the subject of a special Annual Report issued in August.

RODRIGUES

This dependency being more self supporting as regards foodstuffs is at present in a comparatively fortunate position as compared with Mauritius where agriculture is practically confined to the raising of sugar for export, so that almost all foodstuffs have to be bought from abroad. In this connection, a comparison of the rice imports of Mauritius and Rodrigues for 1930 is interesting and shows that whereas Mauritius imported rice at the rate of 128 kilos per head of population, the figure for Rodrigues was only 25 kilos.

Meteorological conditions during the year were very favourable for crop production.

In August and September, an epidemic among goats on the Island was reported and the Government Veterinary Surgeon sent from Mauritius to report on the position which was found to be due to an infestation of the "wire-worms." As a consequence, the importation of goats and of goat manure into Mauritius from Rodrigues was prohibited for some months following the outbreak.

The work of the officer in charge of the Experimental Station has been chiefly concerned with the encouragement of food production and the testing of new plant introductions.

* Has not yet assumed duty.

Goats are said to be still doing considerable harm to trees on the Island. The recommendations of the Director of Forests and of the Senior Agricultural Officer of Mauritius, who visited Rodrigues in 1929 and reported on this problem, have not so far been carried out.

The annual report of the Acting Agricultural Superintendent, Rodrigues in 1930, which forms an Appendix to this report, gives details of the work carried out by this Department for the period under review.

A. GLENDON HILL,
Acting Director of Agriculture.

11th June, 1931.

PART II

DIVISIONAL REPORTS

I.—ENTOMOLOGICAL DIVISION

From January to September the Division was in charge of the late Mr. D. d'Emmerez de Charmoy, I.S.O. Director of Agriculture and Entomologist. From first October and until the end of the year, Mr. Moutia, the Assistant Entomologist, was temporarily in charge of the Division.

INSECT PESTS

Phytalus Smithi Campaign

This insect is steadily increasing in numbers yearly and is causing considerable alarm. The number of insects captured for the year 1929-30 totalled 265 million as against 252 million for the year 1928-29. The amount spent by the Department of Agriculture during the year on control operations amounted to Rs. 112,412.

A survey on an extensive scale was carried out in the more heavily infested centres, approximately 80 different centres being surveyed. Where the infection was severe, the owner was instructed to dig the larvæ, the total number thus destroyed amounting to 137,263,000.

The parasite "Tiphia parallela," was liberated in 18 centres, either in newly infested centres, or in heavily infested areas where this parasite was scarce.

A regular traffic in Tiphia has been carried on during the year so that much harm has been done in certain centres.

It is estimated that at least one million of these beneficial insects were captured by the public and sold to various estates. This state of affairs has caused the destruction of thousands of insects through unskilled handling. Legislation to provide for the protection of this insect is being passed at an early date.

The late Sir Francis Watts, K.C.M.G., in his report on the Mauritius Sugar Industry, suggested that the whole Phytalus problem be submitted to the authorities of the Imperial Institute of Entomology. To this end, a memorandum dealing with the Phytalus problem in Mauritius was prepared and submitted in April to Dr. Myers of the Imperial Institute of Entomology for his views.

It was hoped that the Phytalus question might be discussed at the Imperial Entomological Conference held in June last in London ; but unfortunately, this was not done, because as reported by the Director of the Imperial Institute of Entomology, the question was thought to be of a local character.

Pending the discovery of other control measures, the night collection of adults, the digging of larvae and the liberation of parasites are the methods being employed to cope with the pest. Research on the incidence of parasites and other obscure points are being tackled by this Division, and are dealt with below.

At the request of the Phytalus Advisory Board, information was sought from Porto Rico on the habits of a Scoliid wasp, *Elis haemorrhoidalis* which might be introduced in this Island, but according to an authority, Mr. H. E. Box, the parasite will not prove useful in Mauritius. Mr. Box suggested that information be sought regarding *Elis caracasana* which is found in Venezuela and this is being done.

Several meetings of the Phytalus Advisory Board were held during the year, and various questions were submitted for the consideration of the Board.

OTHER INSECT PESTS

Sugar Cane Borers

In various places over the Island, some plantations suffered severely from the attacks of Borers: The Pink Borer, (Sesamia Vuteria) and the Spotted Borer (Diatræa sacchariphaga) being the most numerous. Advice on the control of these pests was given to those concerned. At one centre in the Island, La Baraque, the attack by borers was very severe. A systematic campaign was also organised to protect the thousands of seedlings raised by the Sugarcane Research Station.

Coconut Scale Insect—(Aspidiotus destructor)

Coconut plantations all over the Island still suffer from the attack of this scale insect, but the damage done is now less severe. Plants established in good soil and receiving

adequate care when infected resist the attacks of the insect. The parasites and predators of this scale insect are now common on most of the coconut plantations in the Island.

Predators are common in some months of the year, but are scarce at other time, the same is true of the Chalcid parasites as is shown in annexed graph II.

Parasitism as high as 67% was found in March. The lowest figure being 2%, from an isolated centre of infestation.

Periodical visits are being paid to various centres in order to trace the incidence of the parasites, but unfortunately no figures of parasitism are available for July, August and September, owing to the absence, in Rodrigues, of Mr. Vinson.

TOBACCO PESTS

Phthorimaea operculella

As in the preceding year, this insect caused severe damage to tobacco plantations in certain districts. Energetic measures for control were undertaken and the pest checked. The breeding of parasites was systematically done by some tobacco planters.

Eel-worms—Caconema radicicola

Continues to be a major pest on tobacco. Several chemical substances were tried for controlling the pest, but the results were in no case very promising.

TEA

In October a survey was made of the insect pests of tea. This plant in Mauritius is exceedingly free from any serious pest or disease. The following pests were however found :—

1. A leaf miner diptera, a Chloropidae, attacking old leaves.
2. Aphis sp. on young leaves.
3. Scale insects : Aspidiotus ficus and Mytilaspis sp.
4. Acarina : Tetranychus sp.

RICE

Several cases of destruction of rice plantations were noticed during the year, the insect responsible for the damage being the cut-worm—Crambus malacellus.—Several poison baits were tried without success. Other insecticides are now under trial.

BANANA

The Banana weevil—Cosmopolites sordidus—was recorded in various places over the Island. A bulletin on this insect was published and distributed to planters concerned.

MISCELLANEOUS PESTS

During the year, various insect pests were noticed, and advice on same were given to planters.

(*a*) Dactylopius robiniae (?) on acacia plants at La Chaumière. It is worth recording that this scale insect was heavily attacked by several coccinellids, and, apart from this beneficial action, the insectivorous bird Oiseau Blanc (Zosterops Mauritiana) preyed in great number on this insect.

(*b*) Pulvinaria iceryi, on cane plants in green house.

(*c*) Thrips " " " " " "

(*d*) Saissetia haemispherica on Sechium edule (chou-chou) at Rose Hill and Moka.

(*e*) Icerya seychellarum, on citrus and various other plants. It is a very common pest in Mauritius and is at some season of the year heavily attacked by coccinellids and sometimes by an entomogenous fungus.

(*f*) Trioza sp. on Bois d'oiseau at Palmar.

(*g*) Oestrus ovis, on sheep at La Baraque.

(*h*) Thliptoceras octoguttatis—on coffee berries—checked by early spraying with lead arsenate.

(*i*) Cut-worms, on tobacco seedlings.

(*j*) Gryllotalpa africana, on sugar cane tops at Circonstance.

(*k*) Trochorrhopalus strangulatus, on sugar cane tops which were primarily infested with pineapple disease.

(*l*) Dacus sygmoides and Tridacus Emmerezi, on Cucurbitaceae.

(*m*) Aphis tavaresi, on Citrus plants.

(*n*) Red-ants (Solenopsis geminata), on seedlings.

The pests more or less injurious observed in Rodrigues are :—

1. Chloridea obsoleta, on Tobacco, tomato, maize, peas and onion.
2. Prodenia litura, on tobacco and maize (seedlings).
3. Polyommatus boeticus, on peas.
4. Agromyza phaseoli, beans and peas.
5. Lecithocera sp.—sweet potato.
6. Thrips tabaci, on onion.
7. Crocidolomia binotalis, on cabbage.
8. Dacus spp., on Cucurbitaceae.
9. Phthorimaea operculella, on tobacco and potato.
10. Macrotoma simplex, on timber.
11. Xystrocera globosa, on timber.

RESEARCH WORK AND OTHER ACTIVITIES OF THE DIVISION

Mission in Rodrigues

In July (to September) Mr. J. Vinson, the Scientific Assistant in the Division proceeded to Rodrigues with a view to investigating the possibility of introducing into Mauritius Scoliid wasps which might parasitise the White Grub, Phytalus Smithi.

One species of Elis, closely related to the local species Elis rufa, was found and from what could be gathered of the entomogenous fauna of that Island, this species of Elis very probably parasitises two indigenous species of Lachnosterna, namely L. Gradaria and L. Rodriguezi. As the size of these two insects approximates to that of Phytalus Smithi, a closely related species, it was thought advisable to introduce this new Elis species to Mauritius.

Of the first consignment received 107 females and 67 males were liberated at Belle Vue (Maurel) in September.

A second consignment was received in November, 40 females and 63 males, and liberated at Belle Vue (Harel). Both of these places are highly infested centres.

During his stay in Rodrigues, Mr. Vinson also carried out investigations on insect pests of economic importance in that Island, and delivered lectures to planters on methods of controlling these pests. A list of the insects damaging crops in Rodrigues is given under another heading in this report.

During the year, the following lines of research were undertaken by the Division :—

Phytalus and its parasites.—(a) Experiments were carried on in insectaria to discover the relation existing between slightly and heavily infested soils. The point is to determine whether there exists some factor or factors which influence the normal cycle of Phytalus when these larvæ are found in extreme abundance in the soil, as it is noticed that very heavy infection is followed by a decrease due to some inhibiting factors other than parasitism.

(*b*) The incidence of Tiphia parallela throughout the year has been worked out, and it is found that this parasite was most abundant from March to July (see Annexure III) and that this period corresponds with the time when 75 per cent of the Phytalus larvae have reached medium size and are ready to be parasitised. In other words there was a good synchronology at that time between the development of Tiphia and Phytalus. The same table shows that from October to December there is a high proportion of males, most probably the parthenogenetical generation.

A similar survey was carried out for Elis thoracica and both surveys will be continued next year.

(*c*) Cage experiments are carried out with the imported species of Elis from Rodrigues. It was found that this Scoliid wasp can parasitise Phytalus Smithi in cages, and therefore there is good reason to believe that this parasite will adapt itself on Phytalus under natural conditions in the field.

(*d*) Surveys for estimating the degree of parasitism by Tiphia were carried on in the various infested centres. Parasitism as high as 40% was found in some places.

2. *Tobacco Eel-Worm.*—Various substances like creoline, formol, ammonia, were tried against this pest with no great success. A collection of plants harbouring this nematode in Mauritius has been started.

3. Experiments with various insecticides received from different firms abroad were tried against several insect pests. Chemicals like colloidal sulphur, pysect, etc., were found to be good insecticides.

4. *Investigations on the various local parasites attacking the insect pests of economic importance in Mauritius.*—During the year, several insect pests were reared in the laboratory with a view to discovering whether they have any natural parasites in Mauritius.

Parasites were obtained from Galleria melonella, lawn cut-worm, Crambus emmerezellus Aphis sacchari, Phthorimaea operculella, Pinnaspis buxi.

It is intended to devote more time to this important work next year.

5. *Life-History of the snail, Achatina.*—The breeding and life-history of this garden pest is being studied.

3. *Exportation of Tiphia to Barbados.*—At the request of the Government of Barbados two consignments of Tiphia parallela, originally introduced into Mauritius from Barbados in 1913, were forwarded to the Department of Agriculture, Barbados. The consignments were shipped in four cases containing larvae of Phytalus parasitised by Tiphia and were sent through Farnham Royal Laboratory, Bucks.

7. *The coconut scale insect Aspidiotus destructor.*—Forty visits were paid during the year to various plantations on the Island and the index of parasitism determined in each locality.

MISCELLANEOUS ACTIVITIES

Other activities of the Division consisted of :—the carrying out of postmortem examination on farm animals, the examination of imported plants and those intended for export, co-operating with the Botanical Division in carrying out a cane disease survey during the crop, the delivery of lectures in Zoology and Entomology to first and second year students of the Agricultural College, examiner's duties, photography and the usual periodical visits to estates where advice on the control of insect pests was sought.

PUBLICATIONS

During the year, a bulletin on the Banana Weevil was published.

2. A memorandum on the Phytalus position in Mauritius was prepared and is expected to appear in the Bulletin of Entomological Research.

3. At the request of Mr. E. R. Grant, Director of the Zoological Review, Washington, an article on the extinct and actual fauna of terrestrial vertebrates in Mauritius was prepared.

4. Coloured plates to illustrate the local insects of economic importance are in hand.

5. A list of photos have been prepared to illustrate the bulletin "Coleopterons of economic importance in Mauritius."

A. MOUTIA,
Assistant Entomologist.

ANNEXURE III

INCIDENCE OF PARASITES OF PHYTALUS (1930)

Months	Pamplemousses	Flacq	Moka and P. Wilhems	Savanne and Gd. Port	Remarks
January ...	*	†	*	‡	
February ...	‡	*	*	‡	
	§	¶	‖	¶	
March ...	‡	*	‡	**	Mostly females in all centres.
	§	¶	††	‖	
April ...	‡	*	‡	**	
May ...	‡	¶	‡	**	Mostly females in all centres.
June ...	‡	‡	‡	**	
July ...	‡	¶	‡	**	Large percentage of females.
August ...	*	*	*	‡	Many males. Distribution of Elis partial.
	††	¶			
September ...	*	*	*	‡	
	††				
October ...	*	†	*	‡	Large percentage of males.
	§				
November ...	*	*	*	*	
December ...	*	‡	**	**	Mostly males in all centres.
			§		

* Tiphia rare.
† No Tiphia.
‡ Tiphia fairly abundant.
§ Elis fairly abundant.
¶ Elis rare.
‖ No Elis.
** Abundance of Tiphia swarming on Conde plants.
†† Abundance of Elis Thoracica.

11

BOTANICAL DIVISION

The staff of the Mycological Division consisted of a Botanist and Mycologist and of a Plant Inspector.

The Report of Professor S. F. Ashby, who visited Mauritius towards the end of 1929 with the object of studying the cane disease situation in the Island, reached the Department on September 9th. Consequent upon the recommendations made in this report, the Botanist and Mycologist, Mr. E. F. S. Shepherd, left Mauritius on October 4th, on a visit to Australia and Java, to study the control methods employed against Gumming and Leaf Scald Diseases of sugar cane, and in view of the introduction of new cane varieties in the near future, to acquire a first hand knowledge of the major diseases of the sugar cane, at present unknown in Mauritius. Mr. Shepherd is still on his mission and is expected to return in April 1931.

Professor Ashby in his report also recommended the strengthening of the staff of the Division by the appointment (1) of the Plant Inspector as Scientific Assistant and (2) of a third officer to the post of Plant Inspector, and urged that these measures be given prompt attention in order that the new Inspector might receive in time the necessary training in field work and the work of the Division be maintained during the temporary absence of its Head.

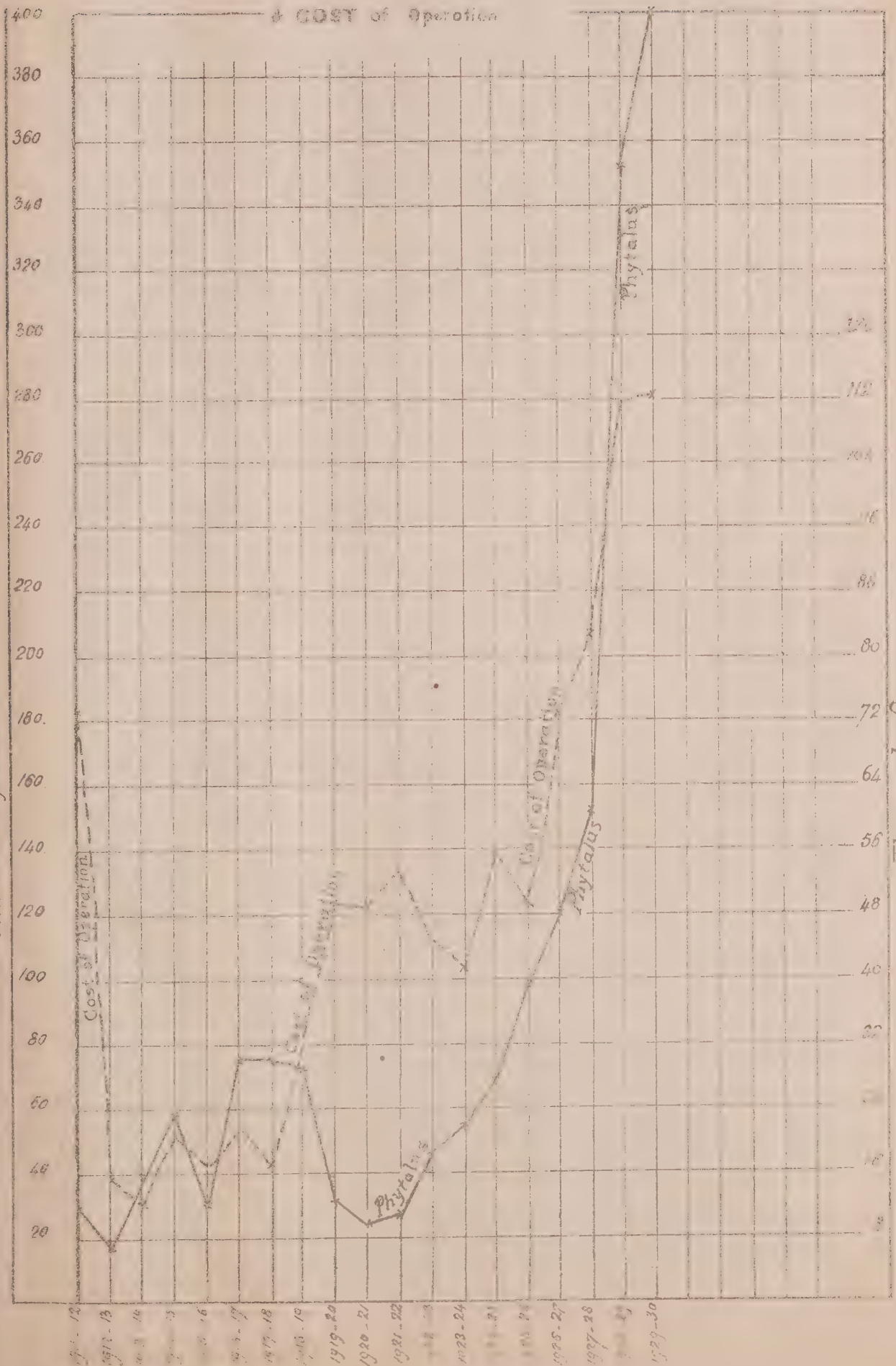
Unfortunately, Professor Ashby's report was late in reaching Mauritius, and on its receipt, Mr. Shepherd left hurriedly on his mission, having to reach Australia not later than October in order to derive most benefit from his visit.

On Mr. Shepherd's departure, the work of the Division was carried out by the Plant Inspector with the help of a junior officer of the Agricultural Division, who had experience of disease survey work.

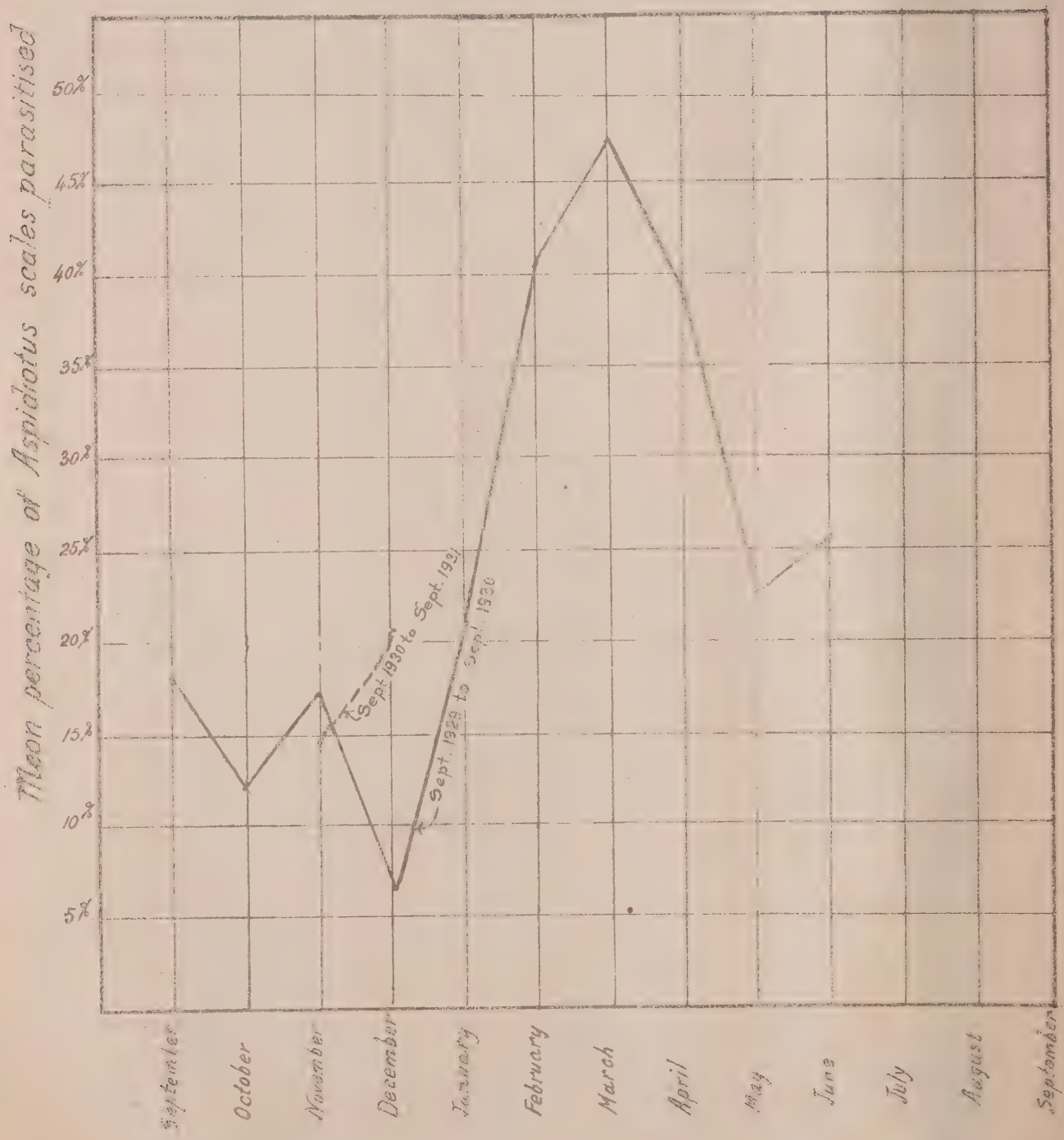
Professor Ashby also recommended that the survey for the incidence of the chief sugar cane diseases in the Island, which, owing to pressure of work in other directions, had been omitted in 1929, be again undertaken in 1930. Arrangements were accordingly made with the Agricultural and Entomological Divisions for the Chief Phytalus Officer and the junior officers of these Divisions to help in this survey. Valuable aid was received from these Divisions. The results of the survey are published in tabular form in Appendix II.

To face p. 1

Graph showing total number of
PHYTALUS DESTROYED YEARLY
since beginning of Campaign
& COST of Operation



Graph illustrating the
Incidence of Chalcid Parasites
of Aspidiotus Destructor throughout the Year 1929-30



Another recommendation in Professor Ashby's report referred to the inadequate space allotted to the Botanical Division at the headquarters of the Department, "one room of moderate size having to serve as office and laboratory for both Botanist and Inspector."

The recommendation for more space has been put into effect, and the Botanical Division has now two rooms at its disposal.

SUGAR CANE DISEASES

Leaf Scald, caused by Bacterium albilineans (Ashby) and *Gumming Disease*, caused by Bacterium vascularum (Cobb. G. Sm.) continue to be the two principal cane diseases in the Island. The importance of leaf scald is due to the fact that the White Tanna cane, which occupies more than 50 per cent of the total cultivated area in the Island, is rather susceptible to this disease. With the exception of R.P. 8, the other varieties are hardly, if ever, attacked. Formerly the White Tanna was thought much more resistant to the two diseases than recent researches have shown it to be.

The results of the cane disease survey carried out at mill carriers to date show that on White Tanna in 1927, when the two diseases were listed together, the percentage of *apparent* infection was 18.4; in 1928, Gumming scored 6.4% and Scald 8%, giving a total of 14.4% for that year; in 1930 the figures were Gumming 8.8% and Scald 8% giving as total 16.8%. Many of the cases of gumming were undoubtedly also scald infected, so that the *total* per centage of scald is in excess of that revealed by the survey.

The above figures include canes showing the symptoms of the diseases to varying extents, a fairly large percentage of the cases observed being canes showing but slight traces of infection. Two estates crushing White Tanna canes to the extent of 75% or more have shown consistently percentages of infection up to 50 or 60%, and it is noteworthy to remark that these estates were obtaining abnormally low field and factory yields, so that the poor results obtained can be attributed in large measure to the bad quality of cane milled.

With the object of obtaining planting material as free as possible from Gumming and Scald, nurseries have been established at the Central Experiment Station and at three different estates with apparently disease-free seed, selected as carefully as possible and prepared with knives disinfected prior to each cut. Probably through latent infection, however, a certain percentage of the canes in these nurseries have been showing evidence of being diseased; these have been rogued out at periodical inspections, and two of the plots have already been reaped and material again selected for the planting of nurseries of the second generation. It is hoped that this procedure will in time yield planting material as free from disease as possible.

The plots laid down in November 1928 to test the effect of hot water treatment of cuttings on Scald and Gumming were reaped in October 1930, when counts were made of the infected stools in each row. The plots were two in number and comprised sections planted with White Tanna cuttings (1) apparently healthy, (2) Gummosis infected and (3) Leaf Scald infected. Each section comprised rows planted (a) with untreated cuttings, (b) with cuttings immersed in hot water at 50°C for one hour, and (c) with cuttings immersed in hot water at 55°C for half hour. The results of this experiment seem definitely to indicate that under the conditions existing here, no benefit from the point of view of disease control can accrue from such a treatment of cuttings.

The percentage of stools infected, even taking into account the rows planted with apparently healthy seed, ranged from 46 to 91 per cent, individual stools in very many cases showing infection both by Gumming and by Scald. Evidently by aerial and other means, some secondary transmission of the diseases at some time or other during the long period the canes have been growing, must have occurred, but the heavy percentage of infection observed in the rows planted with apparently healthy seed suggests strongly the existence of the two diseases, either separately or together, in a hidden form in most of the cuttings planted. Apart from the possibility of the diseases having been harboured in such a latent state by many of the cuttings, their widespread presence in this connection may also be due to the fact that these cuttings were selected during the field surveys carried out in 1928 for the incidence of cane diseases, and the knives used in splitting the canes were not disinfected prior to each split. In this case, the above experiment would indicate that even the relatively few bacteria which had gained entrance into the healthy cuttings by the cutting knife, were not killed by the hot water treatment. The method therefore cannot be recommended for application on field scale.

Red Rot.—This disease caused by Colletotrichum falcatum (Went) was not very severe in 1930 and occurred to about the same extent as in 1929. The varieties most affected, as noted during field inspections, are still D.K. 74, M. 131 and R.P. 6.

Smut.—Caused by Ustilago scitaminea, remained confined, as usual, to the lower levels of the Island and was not more severe during the year than in 1929. It has been encountered chiefly on D.K. 74, M. 131, R.P. 8 and P.O.J. 213.

Streak.—This disease, of virus origin, still remains confined to the R.P. 8 variety. It was encountered this year on four new estates, the percentage of infection in each case being very small.

The plot laid down in 1928 to test the effect of streak upon the yield of cane and which, when reaped in 1929, showed a diminution in yield of 44% in the diseased rows, was reaped in first ratoons in November of this year. The yield from the diseased rows was this time 47% less than that from the healthy rows.

There seems fortunately to be no insect vector of Streak in the Island. Had there been one, Streak would have been the cause of serious crop loss.

Planters are still being urged to eradicate the disease by the roguing of affected stools.

Pineapple disease, Root disease complex, Pokkah boeng.—No great harm was caused by these diseases during the year. Indeed the last named one hardly ever causes any serious damage here. The position concerning them remains practically the same as in the previous year.

Stem deterioration.—This affection, encountered chiefly on White Tanna canes, was described in the annual report for 1929. An effort was made this year during the cane selection work in the plot at the Central Experiment Station to select planting material from stools free from the affection, but this was found impossible, as all the stools reaped showed canes affected to varying extents. Its cause is still unknown.

Several other varieties (See Appendix II) have shown lesions suggestive of the same trouble, but on these varieties the damage caused has never been found to equal or even approximate that encountered on the White Tanna.

As regards the formation of a jelly-like or mucilaginous excretion by the cut ends of the White Tanna and R.P. 8 canes mentioned in the annual report for 1929, inoculation tests carried out on healthy R.P. 8 canes have also yielded negative results. The cause of the trouble is still unknown.

Cases of Bunch-top and of young inflorescence rot were noticed less frequently during the year than in 1929. They were encountered on most varieties cultivated, but chiefly on the White Tanna.

Rot of Seedlings.—In 1929 and again in 1930 a root-rot destroyed a certain number of young seedlings in the nursery beds at Pamplemousses and at Réduit. A Pythium was isolated from diseased tissues of the seedlings. It unfortunately died after being kept a few months in culture. It has therefore not been identified.

Lightning injury.—At the close of 1929 the Island was visited by severe thunderstorms, and during the month of January following, notices were received from several estates all over the Island that canes were dying in patches, the affection assuming the form of an evil-smelling heart-rot associated with a pronounced yellowing of the leaves, hollowing of the young internodes and reddening of the central tissues of the stem. Such cases have been attributed to injury caused by lightning.

DISEASES ON PLANTS OTHER THAN SUGAR CANE

Tobacco.—The regulations forbidding the cultivation of ratoons and enforcing the destruction of affected plants have resulted in a considerable reduction in Mosaic disease infection.

Nematodes are still a cause of trouble in some places.

Granville Wilt, caused by Bacterium solanacearum (Sm), was encountered, usually in a mild form, in many plantations. A severe outbreak occurred at Mouna Experiment Station in a portion of a field disinfected with mercuric chloride, where an outbreak of the disease had occurred previously.

The " collar rot " reported for the first time on tobacco in 1929, and from which a Phytophthora has been isolated, was reported this year from four districts, viz : Black River, Pamplemousses, Rivière du Rempart and Plaines Wilhems. In some plantations in Black River its rate of spread has been very rapid and the disease has caused severe losses. Its method of spread is being studied. The uprooting and destruction of affected plants has meanwhile been urged upon planters, and other methods of control recommended. Specimens of the fungus have been despatched to the Imperial Bureau of Mycology for purposes of identification.

Tea.— Towards the end of the year, an inspection of several tea plantations in the Island was undertaken. The following diseases were noticed, all of which, save the first, having been recorded for the first time in Mauritius. They are, however, causing practically no harm to the plant.

(*a*) Grey Blight, caused by Pestalozzia Guepini (Desm.)
(*b*) Brown blight, caused by a species of Colletotrichum, probably C. camelliæ (Mass.)
(*c*) Rim blight, cause unknown, probably due to climatic conditions. Fungus found in association Colletotrichum sp.
(*d*) A leaf spot identified as " Shot-hole " disease (" Bird's eye " spot) ; Fungi found in association : Cercospora sp. (probably C. Theae) and Gloeosporium sp.
(*e*) Partial chlorosis, cause attributed to soil conditions.
(*f*) Scabbed leaves, cause unknown.

Red Rust, caused by an epiphytic species of Cephaleuros, probably C. mycoidea, was also observed in some few instances.

Coconut.—Bud rot (cause unknown). Only two trees at Abercrombie Experiment Station were noticed affected.

Banana.—A Fusarium was isolated in 1929 from the plants affected with the wilt mentioned in the annual report for 1929. The fungus has been identified at the Imperial Bureau of Mycology as possibly a strain of F. cubense, E. F. Sm., which causes the Panama disease of Bananas. No case of the wilt was recorded during 1930.

Other diseases recorded :—

Cassia florida.—Rot of seedlings in the Forest nurseries at Rose Hill, caused by Sclerotium Rolfsii (Sacc.)

Juniperus Bedfordiana.—Rot of seedlings in the Forest nurseries at Rose Hill ; fungus found in association : Rhizoctonia sp.

Imbricaria maxima.—Root rot (cause undetermined).

Cassia occidentalis.—Mildew (fungus undetermined).

Melilotus officinalis.—Mildew (fungus undetermined).

Potato.—Late Blight, caused by Phytophthora infestans. The attacks on the whole were not very severe, although some plantations suffered considerably. This disease can be controlled by spraying at regular intervals with Bordeaux mixture.

MISCELLANEOUS DUTIES

These included :—

(1) Periodic inspections of P.O.J. 2878 cane, planted at Réduit, Pamplemousses, Ebene S.E. and Circonstance, and of Glagah and Kassoer canes at Réduit and Pamplemousses.

(2) Supervision of Cane Quarantine Greenhouses containing various varieties of Java canes recently imported and intended for breeding work.

(3) Supervision and inspection of imported and exported plants.

(4) Supervision of disinfection of bulky consignments of pineapple suckers from Ceylon and Reunion.

(5) Disinfection of imported tobacco, rice, maize and pepper seeds.

(6) The Botanist and Mycologist has prepared a new edition, revised and brought up to date, of his Bulletin on the Diseases of Sugar Cane in Mauritius, published in 1926. This Bulletin is now in the press.

In addition, the Botanist, and during his absence the Plant Inspector, delivered four lectures and supervised two laboratory periods in Botany and Mycology per week at the College of Agriculture.

The opportunity is here taken of acknowledging with thanks the valuable services rendered to this Division by the Imperial Bureau of Mycology, in the identification of fungi despatched to Kew.

G. ORIAN,
Plant Inspector.

III
CHEMICAL DIVISION

Staff.—Mr. R. Lincoln, Assistant Chemist, in addition to his substantive appointment, was appointed Lecturer in Chemistry to the College of Agriculture on January 16th and Mr. F. Berchon, Senior Scientific Assistant, appointed Assistant Lecturer in Chemistry on the same date.

Mr. R. Lincoln proceeded to Europe on 10 months' leave of absence in September, Mr. F. Berchon being appointed Acting Assistant Chemist and Lecturer in Chemistry, while Mr. J. Halais was appointed temporarily as Scientific Assistant.

II—INVESTIGATIONAL WORK

(a) *Liming Experiment.*—This trial was laid down to test the effect of liming local soils, the lime being spread on the surface or else dug in.

The field was divided into two equal portions and each portion into twelve trial plots as follows :—

First Portion

A. Nos. 1, 4, 7 & 10 Controls.
B. Nos. 2, 5, 8 & 11 Lime spread on the soil.
C. Nos. 3, 6, 9 & 12 Lime dug-in.

Second Portion

A. Nos. 3a, 6a, 9a & 12a Controls,
B. Nos. 1a, 4a, 7a & 10a Lime spread on the soil.
C. Nos. 2a, 5a, 8a & 11a Lime dug-in.

The Hydrogen-ion concentration of Control plots = 5.7
" B " = 6.39
" C " = 7.07

In each trial-plot five standard varieties were established, namely : White Tanna, Striped Tanna, R. P. 6, R. P. 8 and D. K. 74, there being one row of each variety.

The aim was to ascertain if these varieties are equally effected by an acid soil and if so to what extent. According to these first year's results it appears that : (1) the application of lime, whether spread on the surface or dug in, does not produce any effect either on the

yield of cane or in the sucrose content; (2) of the five varieties compared, White Tanna seems the least susceptible variation but, excepting Striped Tanna, is of lower yield than the others; (3) White Tanna is of higher sucrose content than any of the other varieties.

(b) *Camphor.*—1. Kivumbasi (Ocimum canum). Leaves and twigs of this plant were distilled at Pamplemousses, the yield of oil obtained being 0.125 of specific gravity 0.9181. The oil was submitted to refrigeration to separate the solid Camphor. The minimum temperature possible with the refrigerating apparatus available was—28°C and at this temperature only a small amount of crystals could be collected. From the results obtained no conclusions could be drawn as a temperature as low as—78°C generally is necessary to effect maximum separation.

3. *Cinnamonum Camphorum.*—Seeds from Formosa collected from trees known to produce solid Camphor were supplied to this Department by the Royal Botanic Gardens, Kew, in 1927 and were planted at Curepipe Gardens at 1,900 feet above sea level. Distillation tests are now being undertaken to ascertain whether under Mauritius conditions the trees produce solid camphor and in what quantity. Out of a total of about 180 tests to be carried out, 20 have been done up to date of which 19 have given solid camphor and one oil only.

(c) *Soils.*—Investigations were carried out on soils and subsoils from reclaimed lands of Sambirane (Madagascar) known to be unfit for cultivation. They were found to contain a high percentage of soluble salts (chlorides and sulphates of alkalies) which is the probable cause of their sterility.

(d) *Advisory Work.*—The advice of the Chemist was sought from time to time in regard to manurial questions.

III—WORK DONE FOR OTHER GOVERNMENT DEPARTMENTS

(*a*) Samples of coal were sent by the Railway Department for analysis; the calorific value as well as the percentage of ash and the sulphur content being determined.

(*b*) Samples of lime were received from the same Department for calcium oxide determinations.

(*c*) A sample of tar received from the same Department was tested as to its suitability for use as a protective coating for iron poles and was found unsuitable owing to the high amount of acid present.

IV—ROUTINE ANALYSIS

The routine work of the Chemical Division showed a considerable increase during the year under review as compared with the preceding year. This was due to the fact that nearly all the samples of canes from Pamplemousses were crushed at the Central Experiment Station.

	Samples received	Estimations
Guano melange ...	10	57
Lime	15	15
Dipping solutions ...	40	57
Phosphatic manures ...	9	9
Fumiers	5	10
Coal	5	15
Miscellaneous ...	30	92
Cane juices	1,533	3,066
	1,647	3,321

V—EDUCATION

The usual teaching duties at the Agricultural College were performed by the Assistant Chemist and the Senior Scientific Assistant. These duties consisted of the delivery of lectures and the supervising of laboratory work in each class.

VI—EXAMINATION

The Lecturer in Chemistry was appointed one of the four examiners for the Registration of Agricultural Chemists Examination.

F. BERCHON,
Senior Scientific Assistant.

IV
SUGAR TECHNOLOGY DIVISION

Visits to factories, investigations, etc.—The Sugar Technologist visited twenty seven factories during the crop, some of them repeatedly. The Assistant Technologist accompanied him on many occasions. Advice was given and investigations carried out.

The percentage of sucrose in the cane was much above normal at the beginning of the crop. This was due to early maturing, probably the effect of a dry and rather cold season. The average for the crop, however, did not differ much from last year's. Crushing was easy and the quality of the juice satisfactory. Mill extraction and recovery were good. Sugar extracted per cent cane was very slightly higher than in 1929.

The proportion of raw sugar was higher than last year, the percentage being above 82%. The quality of the sugar was, as a rule, very satisfactory. The average polarization was nearer to 99 than to 98 and the factor of safety lower than 0.25.

The experience gained in the manufacture of raw sugar has proved that although

sugar dryers are helpful in some cases, a raw sugar with good keeping qualities can easily be produced without dryers.

There was scarcely any change in the equipment of factories owing to the critical position of the Industry caused by the low prices.

Contrôle Mutuel.—Thirty three factories contributed to the Contrôle Mutuel and returns were regularly distributed fortnightly amongst contributors. The final figures have not yet been received. They will be published in the Revue Agricole. Most of the factories have given permission to publish their names. The 42 factories working this year had a chemical control.

No new installations of weighing machines for juices were made. One factory installed a balance for weighing the syrup (Clairce). One Menage's automatic measuring tank was installed for measuring maceration water and worked satisfactorily.

Educational.—Full courses of lectures were delivered by the Sugar Technologist and the Assistant Sugar Technologist to the students of the College of Agriculture in Sugar Cane Cultivation, Sugar House Chemistry, Sugar Technology, Mechanical Engineering, Building Construction and Surveying. The lectures were followed by practical demonstrations and laboratory work.

The students visited sugar factories repeatedly with the Sugar Technologist and his Assistant during the off season and the crop, for practical demonstrations.

Miscellaneous.—Mr. André Kopp, Director of the Station Agronomique and Government agricultural authority of the Island of Réunion, visited the Colony with a view to studying our Sugar Industry. The Sugar Technologist accompanied Mr. Kopp on several visits to sugar plantations and factories.

The Sugar Technologist presented a report on his mission to Java in 1929. He also delivered a lecture to the Chamber of Agriculture on the same subject. Articles were written for publication inthe Revue Agricole.

L. BAISSAC,
Sugar Technologist.

V
STATISTICAL DIVISION

Agricultural Statistics.—The Agricultural Section of the Blue Book was prepared and statistical data supplied to the International Institute of Agriculture, Rome, to the Board of Trade, the Colonial Secretary's Office, the Immigration Department, and to various Institutions and individuals interested in Agricultural questions. Quarterly reviews on the cost of living and its Index Numbers were also issued and similar reviews on weather and crop conditions submitted to Government together with the usual crop forecasts. The results of the field trials of the Department were subjected to the customary mathematical analysis to determine their measure of precision.

Meteorological.—The meteorological service of the Department was maintained on the same lines as heretofore. Observations of air temperature (automatic), evaporation and rainfall were kept at the Central Experiment Station, Réduit. Similar records were also kept at four sub-stations with the difference that ordinary thermometer readings were taken, no thermographs being available. Rainfall figures were supplied by most of the Sugar Estates in the Colony.

Educational.—The general management of the Agricultural College was carried on as usual, under the direction of the Principal and with the help of the College Clerk.

Lectures in Physics and instruction in Practical Physics were given once a week to first-year Students and once a week to Second Year Students. Lectures in Applied Mathematics were given to the same students once a week for each class.

Research.—A bulletin on the relation between the sucrose content of cane and temperature and rainfall was published (Scientific Series No. 16).

Special Work.—The compilation of results of the Agricultural Census taken during the first three months of the year was performed and a report published in September. In May, the Statistician was appointed Census Commissioner for Mauritius and its Dependencies and, during the last four months of the year, preparations for the forthcoming census involved considerable extra work.

M. KŒNIG,
Statistician.

VI
VETERINARY DIVISION

Importation of Animals.—The number of animals imported into the Colony during 1930 was :—

	From Foreign Countries	From Dependencies
Cows and Oxen ...	5,115	242
Horses	13	...
Pigs	109	1,325
Sheep	4	417
Goats	...	1,650
Rabbits	...	11

All animals were examined previous to their landing.

Two dogs imported were placed under six months' observation in the Government Quarantine kennels.

CONTAGIOUS DISEASES

Surra.—7,793 blood smears were examined during the year, 27 cases being detected 3 being amongst equines which were slaughtered according to regulations. Affected bovines were given arsenical treatment with successful results.

Tuberculosis.—86 cows were tested with tuberculine with the following results :—

Breeding herd : 39 cows tested, 3 positive reaction and 1 doubtful.

Milch cows : 47 cows tested, 9 positive reaction and 3 doubtful.

B. C. G. Vaccine.—991 doses of this vaccine were delivered to breeders. Vaccinated calves are thriving well and the number of doses applied for is rapidly increasing.

GOVERNMENT DAIRY

One cow died of septicœmia, two attended for abcesses and three for mammitis. Nineteen cases of abortion were recorded. The specific agent is still being sought, B. abortus and melitentsis being absent. Serum from the blood of all the cows has been forwarded to the Imperial Bureau of Animal Health for investigation. The average number of animals at the Dairy during the year was 108.

GOVERNMENT ANIMALS

Animals, the property of Government, were attended to for the following ;—*Police Department* : 3 cases of lameness, one case of colic and two of accidental wounds. *Medical & Health Department* ; One mule for wounds, two for lameness, one bullock for keratitis and another for swelling of the neck.

REPORT OF DEATH

155 deaths of animals were reported to this Division by the Police and immediate surveys made in the vicinity where these deaths occurred with a view of ascertaining whether the deaths were due to contagious disease.

MEAT INSPECTION

The varions abattoirs of the Colony were visited. Four carcases seized on account of tuberculosis were destroyed. Thirty underaged cows and heifers were allowed to be slaughtered, these animals being barren or unfit for breeding.

CASES OF CRUELTY

Twenty animals were examined at the request of the Police Department, several owners being prosecuted and fined for cruelty.

INSPECTION OF RODRIGUES

Owing to an abnormal death rate amongst goats in Rodrigues, a visit was paid to that Island during the year. The deaths were found to be due to wire-worm infection. The importation of goats and manure into Mauritius from Rodrigues was as a consequence temporarily prohibited.

Two Black Head Persian rams together with two pure bred Yorkshire piglets were imported into Rodrigues for breeding purposes.

LECTURES AT THE AGRICULTURE COLLEGE

Courses of lectures were delivered as usual during the year to the first year students.

F. E. LIONNET,
Government Veterinary Surgeon.

VII

GOVERNMENT DAIRY

Yield of Milk.—94,873 litres were produced during the year and disposed of as follows :—

Supplied to Hospitals	...	51,461 litres
Supplied to the Public	...	38,124 „
Fed to calves ...	...	4,873 „
Samples for control	...	415 „

Individual yields are given in annexed table.

Births.—28 births were recorded, comprising 16 males and 12 females.

Deaths.—One calf died accidentally. Two cows died, one from perforation of stomach and heart wall by a surety pin, and the other from septicæmia as the result of a dead fœtus.

Abortion.—Nineteen cases of abortion were recorded during the year, the cause of which has not yet been determined, although recent microscopical examinations of smears from viscera of fœtuses have led to the suspicion that the causative organism may be a streptococcus. The occurrence of abortion coupled with the fact that several cows retained their afterbirth, resulted in severe losses for the Dairy.

Sales.—22 calves were sold to breeders.

Y. LEFÉBURE,
Officer in charge Dairy.

Government Dairy—Curepipe—Return of milk yield during the year 1930

MONTHS	Princess I	Reduit	Medine	Triolet	Princess II	Elsenberg	Pretoria II	St. Pierre	Elsa	Nora	Bet III	Shamrock II	Violet 2/1	Eva	Bet I	Bianca	Daisy II	Hilda	Daisy I	Vaillante	Blanchette	Alerte	Nerveuse
January ...	272	290	236	183	223	288	34	7	279	73	303	287	279	167	330	305	280	93	242	220	130	85	33
February ...	242	235	198	148	188	236	...	...	221	51	264	266	228	131	281	248	231	79	216	198	106	56	...
March ...	263	233	232	153	73	224	...	...	128	28	283	287	243	142	224	168	214	88	238	225	131	69	...
April ...	211	124	218	144	78	195	41	...	...	...	250	252	210	122	201	235	203	144	177	217	111	25	...
May ...	194	5	209	134	125	170	231	...	...	...	234	249	192	98	194	202	187	113	162	183	86	..	...
June ...	155	...	180	117	108	139	254	10	24	...	215	193	168	79	132	170	150	89	129	34	73	...	...
July ...	155	..	180	105	100	111	225	406	472	...	201	186	150	68	133	154	143	93	124	...	60	...	...
August ...	144		175	76	86	57	180	384	415	..	152	149	128	55	118	116	123	80	104	...	...	...	...
September ...	132		172	66	72	54	136	334	372	...	106	29	82	49	87	110	108	22	104	...	...	...	...
October ...	125	died	150	156	26	81	98	324	346	...	24	...	16	35	10	28	56	...	105	...	...	...	...
November ...	125		144	144	...	82	62	295	304	...	...	...	...	...	...	...	...	...	95	...	...	...	...
December ...	128		133	124	...	95	7	275	308	313	280	298	328	...	...	...	...	33	92	...	...	...	...
Total	2,146	887	2,227	1,550	1,079	1,732	1,268	2,035	2,869	468	2,312	2,196	2,624	916	1,710	1,736	1,695	834	1,788	1,077	697	235	33

Government Dairy—Curepipe—Return of milk yield during the year 1930—(Contd.).

Months	Bruyante	Laborieuse	Abondante	Maraudeuse	Belliqueuse	Petulante	Mignonne	Docile	Feconde	Neigeuse	Mt. Blanche II	Charlotte II	Mt. Blanche I	Aster III	Pretoria I	Mauricia	Daisy 2/1	Geranium III	Larkspur	Majestueuse	Capricieuse	Narcissus 2/2	Charlotte I	Geranium II
January ...	86	229	221	71	...	91	78	209	271	185	197	274	214	280	78	513	254	284	266	251	178	307	224	452
February ...	69	198	178	57	...	70	50	181	238	166	164	226	177	223	2	428	218	259	237	217	159	256	201	373
March ...	58	226	201	62	..	74	52	220	260	189	182	232	186	218	...	446	243	278	249	215	177	267	216	485
April ...	7	197	174	66	...	70	6	167	251	184	164	208	176	174	...	374	235	262	216	197	167	242	183	316
May ...	...	176	159	58	...	55	...	114	224	182	154	177	162	72	...	354	235	220	193	190	162	233	163	236
June ...	...	120	61	50	...	52	...	65	180	140	122	125	57	130	...	237	212	184	150	139	130	203	125	133
July ...	...	106	...	47	...	49	...	69	187	132	116	69	...	98	...	119	208	189	136	113	132	209	103	100
August ...	..	113	...	39	...	2	...	55	194	138	85	3	...	80	...	...	200	174	80	94	125	171	68	21
September ...	...	73	...	36	...	..	...	45	183	130	49	...	...	64	...	...	185	169	4	73	122	177	53	...
October ..	..	...	85	17	...	...	...	23	164	129	...	...	...	29	185	72	166	101	44	47	122	171	25	...
November ...	...	...	473	...	...	...	..	...	163	125	...	263	240	...	120	522	134	9	65	1	111	168	...	...
December ...	...	28	442	...	...	...	151	...	172	129	83	383	247	...	93	549	94	...	53	...	100	168	...	..
Total ...	220	1,466	1,994	503	...	463	337	1,148	2,487	1,829	1,316	1,960	1,459	1,468	478	3,614	2,384	2,129	1,693	1,537	1,685	2,572	1,361	2,116

Government Dairy, Curepipe—Return of milk yield during the year 1930 (Contd.).

Months	Flacq	Thora	Bianca II	Favorite	Clara	Rose Belle	Rose II	Replete	Bet II	Diligente	Pretoria III	Aster IV	Gracieuse	Pretoria IV	Narcissus 2/3	Vaillante	Violet I	M/bourg	Tulip III	Grand Total
January ...	135	43	261	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	10,291
February ...	286	337	256	89	31	200	208	...	...	...	...	...	...	...	...	...	...	...	..	9,580
March ...	324	337	294	385	257	252	266	75	...	...	...	...	...	...	...	...	..	...	...	10,532
April ...	306	285	273	349	216	220	204	208	122	...	...	...	...	...	...	...	...	...	...	9,377
May ...	285	218	247	309	132	199	203	195	146	66	..	...	...	...	...	...	...	...	...	8,741
June ...	223	158	202	264	139	149	175	172	116	155	55	..	...	...	...	...	...	...	...	6,840
July ...	223	131	203	264	123	140	184	174	106	163	355	162	...	...	...	...	...	...	...	7,476
August ...	225	81	189	267	92	125	188	173	93	173	287	269	...	...	...	...	..	...	...	6,346
September ...	196	10	157	248	68	118	181	168	84	169	265	263	95	131	214	219	...	...	...	5,984
October ...	99	...	27	254	55	127	178	169	67	161	252	271	130	277	271	404	...	...	...	5,702
November ...	64	...	..	238	47	126	168	157	57	152	224	251	134	239	263	371	...	...	...	6,072
December ...	...	...	...	169	10	123	152	114	57	157	202	240	143	237	263	370	188	295	104	7,932
Total ...	2,366	1,600	2,109	2,836	1,220	1,779	2,107	1,605	848	1,196	1,640	1,456	502	884	1,011	1,362	188	295	104	94,873

VIII

TOBACCO DIVISION

PROGRESS OF INDUSTRY

There was a considerable increase in the acreage registered during the year despite the bad conditions which prevailed during the early months, and the low prices obtained for leaf during the greater part of the year. The following table shows the acreage registered for the years 1928, 1929 and 1930.

District	1928	1929	1930
Flacq	693 acres	1,312 acres	1,296 acres
R. du Rempart	294 ,,	661 ,,	783 ,,
Black River	272 ,,	269 ,,	378 ,,
Pamplemousses	157 ,,	243 ,,	371 ,,
Port Louis	31 ,,	46 ,,	44 ,,
Plaines Wilhems ...	82 ,,	74 ,,	140 ,,
Moka	54 ,,	59 ,,	26 ,,
Grand Port	5 ,,	4 ,,	12 ,,
Savanne	9 ,,	13 ,,	7 ,,
Totals ...	1,597 ,,	2,681 ,,	3,057 ,,

As will be seen from the preceding table there was an increase of 376 acres in 1930 The crop is estimated to have been 525,000 kilos, of which 426,951 kilos were purchased by local manufacturers as against 298,077 kilos purchased in 1928 and 408,394 kilos in 1929. The yield per acre, calculated on the estimated yield for acreage registered, was 171 kilos, a slight increase over the previous year's figure of 152 kilos.

The amount of local leaf used in manufacture was 261,852 kilos as compared with 270,792 in 1929.

The total amount of tobacco manufactured in the Colony was 223,885 kilos, as against 251,050 kilos in 1929.

The total issues from factories during the year was 221,728 as against 226,030 in 1929.

There is thus a decrease in the output from local factories which would appear to be due to the increase in the imports of cigarettes. The table below sets forth the import figures for the years 1929 and 1930, from which it will be seen that whilst there is a decrease in the imports of manufactured tobacco and unmanufactured tobacco, and also in the total weight imported, there is an increase in the weight of cigarettes, and in the value of the total importations. This is the first recorded increase in the value of tobacco imported since 1924, the increase being Rs. 75,215.

IMPORTS

	1929		1930	
	Weight	c.i.f. value	Weight	c.i.f. value
	Ks.	Rs.	Ks.	Rs.
Manufactured tobacco	10,555	24,514	9,070.483	23,140
Unmanufactured tobacco ...	19,767	45,468	14,938.650	55,565
Cigars and Cigarettes	35,247	246,831	39,985.310	313,323
Total ...	65,569	316,813	63,994.443	392,028

The increase in the importations of cigarettes almost balances the decrease in the total issues from local factories, the increase in imports being 4,738 kilos and the decrease in issues from local factories 4,302 kilos.

It would appear therefore that the revised scale of duties levied in October 1929 is operating in favour of the imported article, and against cigarettes manufactured locally from imported leaf or those manufactured from blends of imported leaf and local leaf.

The revenue derived from tobacco shows a considerable increase, Customs duties being Rs. 607,083 as against Rs. 597,972 in 1929 and Excise being Rs. 427,478 as against Rs. 285,935 in 1929 ; the increase being Rs. 9,111 and Rs. 141,543 respectively. The total revenue derived from tobacco during the years 1929 and 1930 is as follows :—

	1929	1930
Customs duty	Rs. 597,972.00	Rs. 607,083.75
Excise duty	285,935.00	427,478.11
Registration of plantations	2,745.00	3,036.00
Total	Rs. 886,652.00	Rs. 1,037,597.86

The above statement shows an increase of Rs. 150,945 and is the highest amount of revenue recorded since 1927.

The stocks of local leaf in factories at the end of the year were far greater than the previous year being, Rs. 238,298 as against Rs 134,619 in 1929. The following table shows the losses incurred in leaf in factories.

Stock in hand on 1st January 1930 ...	...	Ks. 134,619.000
Purchases during the year ...	...	,, 426,951.500
Total	...	,, 561,570.500
Local leaf used in manufacture ...	...	Ks. 261,852.461
Stock in hand on 31st December 1930	...	,, 238,297.700
Total	...	,, 500,150.161
Loss due to evaporation scrap etc.	...	,, 61,420.339
Total	...	,, 561,570.500

The above table shows a loss in leaf during storage of approximately 23 per cent.

During the year under review Ks 27,630 of tobacco were imported from Rodrigues as against Ks. 33,532 in 1929. Only 640 kilos of this leaf were used in manufacture, the greater part of the leaf being used for chewing without any further preparation. The following table sets forth the amounts of all leaf used in manufacture during the year, and the total amount of tobacco manufactured.

Local leaf used in manufacture ...	...	Ks. 261,852.000
Rodriguez leaf used in manufacture	...	,, 640.000
Imported leaf used in manufacture	...	,, 17,835.000
Total leaf used in manufacture	...	,, 280,327.000
Total amount of tobacco manufactured	...	,, 235,885.000
Losses during manufacture ...	...	,, 44,442.000

The above table shows a loss of 15.8 per cent during manufacture.

EXPERIMENTAL WORK

Experiments were carried out with various varieties at Barkly and Mouna Experimental Stations, and a demonstration plot opened at Argy, Flacq.

Barkly.—At this experimental station very little land was available for tobacco experiments owing to most of the land going into rotation crops.

The Turkish tobacco varieties were planted on an area of 765 square yards, but the spacing, 3 feet by 3 feet, was found to be too wide and in consequence the yield was extremely low. Again this tobacco was planted during the cool months of the year whereas better results would be achieved during the warmer months. Another factor which caused considerable damage to the leaf was the wet weather experienced during the curing period, which caused the leaf to be too long on the curing racks so that moulds developed on the majority of the leaves.

Mouna. At this station a new field was opened upon an area of 3½ acres and three plots laid down under different treatments, which consisted of decreasing quantities of pen manure and increasing quantities of fertilizers. The plots were planted during the late May and early June. The weather conditions were very dry and irrigation had to be resorted to.

Very little difference was noted in the growth of the plants but the plots with the lowest application of pen manure gave a lighter bodied leaf than the plot receiving the largest dressing of pen manure. The curing of the leaf from all plots was the same and only medium grade leaf was obtained. The upper leaves of the plants in all plots took a considerable time to mature and harvesting was spread over a period of two months. The variety grown was Amarello. This variety appears to have the peculiarity of slowly maturing its upper leaves, thus prolonging the harvesting period. The yields obtained are put forward in table A annexed.

Seeds from selected hybrid plants were sown and about ¾ acre planted, but the plants were very poor and no further selections were made. The cured leaf obtained from these plants was of poor quality and, as will be seen from the yield table, the yields extremely low.

A further trial with Turkish tobacco was made under the same treatment as at Barkly but mildew (Oidium sp.) caused an entire failure of the crop. This tobacco would appear to be unsuitable for winter cropping, also the leaf must be ready for harvesting during a dry period as it must be sun cured, and as there is no clearly defined wet and dry season I do not consider this tobacco will be suitable for our conditions.

Turkish leaf grown in 1929 and which has been in bales at the Warehouse for almost 9 months has an exceedingly strong, rank aroma and not the delicate aroma usually associated with this type of leaf. Further, the leaf obtained from "Blue" tobacco and in a less degree from the Virginian varieties gives an aroma resembling Turkish, so there would appear to be no object in carrying out further trials with these varieties.

Field No. 1 which has been under green manure was planted with "Yellow Pryor" during October, and part of the field laid out for potash experiments, but as the entire field was severely attacked with "Granville Wilt" (Bacterium solanacearum), results will not be dependable. This field will have to be abandoned for tobacco for some considerable time. It is, however, intended to carry out experiments with a view to ascertain the effect of seasonal conditions on the disease.

Argy. A demonstration plot was opened there during the year and the following varieties were planted: Turkish, "Karsi Yaka," "Soulook," Virginian, "Amarello."

The Turkish varieties were planted during late June and here also these were badly attacked by mildew and yields were very poor.

The "Amarello" did exceptionally well although it was late in maturing. The yield was 335.6 kilos per acre, and the quality fairly good.

This demonstration plot was closed down at the end of the year.

ITINERARY WORK

The field inspection and advisory work was carried on throughout the year and officers of the Division paid almost 5,000 visits which entailed travelling to the extent of over 20,000 miles.

Seventeen notices were issued for the destruction of mosaic-diseased plants as against 39 in the previous year. No prosecutions were carried out for non-compliance with notices, as against one the previous year.

Seventeen growers were prosecuted for the cultivation of ratoons as against 23 the previous year.

Thirty four growers were prosecuted for the non-registration of plantations as against 12 the previous year.

The total prosecutions numbered 51 and fines amounting to Rs 700 were imposed as against 36 prosecutions and fines amounting to Rs. 470 the previous year.

DISEASES

Mosaic. This disease was reported on 58 plantations and in all cases the infection was slight, the compulsory destruction of diseased plants, enforced under Proclamation 51 of 1927 is preventing the spread of this disease.

One attack was discovered in the seed beds and the entire seed beds infected were destroyed. It is probable that the majority of attacks commence in the seed beds, and it is extremely difficult to detect on the young plants.

Damping off (*Rhizoctonia and Pythium sp. ?*) Several cases were notified during the year on seed beds and all cases were aggravated considerably by excessive watering. The curtailment of watering prevented the spread of the disease in all cases and severe damage only occurred in one or two cases.

Mildew (*Oidium sp.*) Only four cases of mildew were reported, two occurring on the experimental stations on Turkish tobacco only, and the other cases occurred on plants growing under the shade of trees.

Black Shank (*Phytophtora parasitica*). This disease which was reported for the first time in 1929 shows a tendency to spread, fifteen cases being reported during the year, and in several cases heavy losses were sustained.

No cases were reported or notified during the winter months and it would appear that the soil temperature during the cool months of the year is not sufficiently high to favour the growth of the fungus. Investigations on this point will be begun during the coming year.

Granville Wilt (*Bacterium solanacearum*).—Five cases were reported during the year, but none were severe with the exception of the outbreak at Mouna Experimental Station, where several plots were destroyed.

Root Rot (*undetermined*).—Two cases were reported, but in both cases only isolated plants were affected.

GOVERNMENT TOBACCO GRADING WAREHOUSE

This Warehouse, which was established in 1927, was open for the acceptance of leaf tobacco throughout 1930. The object of the warehouse was to grade leaf for export on behalf of exporters, or when considered advisable to accept leaf and export it on behalf of growers. During the year under review, no leaf was forwarded to the warehouse for export, the only leaf received being from the experimental stations, and this leaf was graded, and sold when possible, for the account of the Department of Agriculture.

At the beginning of the year 173 bales of leaf exported to London in 1927 remained unsold, and it was considered advisable to have this leaf reshipped to Mauritius as it was of an unsuitable nature for the home market. Pending reshipment a further 25 bales were sold and the remaining 148 bales were reshipped in August. This leaf is now at the warehouse awaiting sale, but owing to the large quantity of leaf available on the local market, prices have been ruling too low to warrant selling the leaf.

During the last months of the year certain growers approached the warehouse with a view to having their leaf stored pending more favourable market conditions. It was decided to allow these growers to store their leaf in the warehouse at their own risk and at the normal charges laid down in regulations. Several hundred kilos were thus stored.

The total amount of leaf received by the warehouse during the year was 544 kilos flue cured and 1,047 kilos air cured from the experimental stations, and 6,925 kilos flue cured and 643 kilos air cured reshipped from England.

Local sales during the year were 190 kilos flue cured together with 154 kilos air cured leaf from the experimental stations. Twenty-five bales of flue cured leaf weighing 1,652 kilos were sold in London.

The stock of tobacco on hand at the end of the year consisted of 216 kilos flue cured, 514 kilos air cured, and 200 kilos Turkish received from the experimental stations, and 6,925 kilos flue cured and 643 kilos air cured received from England.

THE TOBACCO PRODUCTION AND MARKETING ORDINANCE

The Tobacco Production and Marketing Ordinance 1930 was passed by the Council of Government in December. This Ordinance gives effect to the recommendations of The Tobacco Industry Committee which sat in 1928 and 1929 to consider means for overcoming the difficulties experienced in the Industry. The Ordinance makes provision for the appointment of a Government Tobacco Board, the establishment of a Government Warehouse, and the control of production. The Government Tobacco Board will be given powers to control production and marketing of all leaf in the Colony, and it is hoped that by these means the industry will be placed on a firm footing. It is expected that the Ordinance will come into force during 1932.

G. CORBETT,
Government Tobacco Officer

TABLE A

MANURIAL TRIAL

PLOT TREATMENTS

Plot	Pen Manure Tons	Guano Kilos	Sulphate of Potash Kilos
1	11.65	87.0	19.8
2	8.15	116.5	24.0
3	5.82	146.0	29.5
4	2.33	174.7	35.7

YIELDS

Distance of Planting 3×3

Plot	No. of Plants	Planted	Topped	Harvested	Yield	Yield per acre 100% stand
1	1,693	19.5.30...	19.7.30...	August	111.7 ...	319.4
2	1,882	21.5.30...	19.7.30...	,,	81.2 ...	208.8
3	1,858	26.5.30...	31.7.30...	,,	86.3 ...	224.7
4	1,794	5.6.30...	1.8.30...	Aug. Sept.	78.7 ...	212.3

GRADE TABLE

Plot	Flue Cured Mr	Mt	Di	Du	Air Cured G	Br	Ld	G	D	Scraps
1 ...	24.8...	...	12.8	19.4...	1.8...	19.4...	5.8 ...	1.0	16.8	8.9
2 ...	1.4...	27.6...	...	16.4...	1.2...	12.0...	5.6 ...	.6	9.6	6.8
3 ...	4.4...	28.4...	...	18.4...	2.2...	10.6...	5.2 ...	...	9.8	7.3
4 ...	.8...	...	16.8	18.8...	4.0...	20.0...	2.0 ...	...	10.4	5.9

Variety	Pen Manure Tons	Guano Kilos	Sulphate of Potash Kilos
Hybrids ...	1.88 ...	163.4 ...	32.0
Amarello imported seeds	...	162.4 ...	35.3

Variety	Acreage sq. ft.	Planted	Topped	Harvested	Yield Kilos	Yield per acre Kilos
Hybrids	34.600	6 to 29.6.30	28.8.30	19.9.30	107.5	152.
Amarello	3.080	12.6.30	28.8.30	18.9.30	8.2	115.7

ARGY DEMONSTRATION PLOT

Variety	Pen Manure
Amarello ...	4 cartloads

Variety	Acreage	Planted	Yield	Yield per acre
Amarello ...	½ Acre ...	6 & 10.7 30...	167.8 kil.	335.6 kilos

IX

AGRICULTURAL EXPERIMENT STATION DIVISION

Central Experiment Station.—A good deal of work connected with the improvement of the Station was executed during the year; the periphery of various fields was rectified, the fields cleared of stones and the planting effected on new scientific lines.

Sugar Cane was the chief crop grown. Various promising canes were sold or given free or used for planting various departmental experiment fields.

A greater impulse than before was given to the raising of food crops.

Green manuring crops, Eddoes and Tannias and Ocimum sps (Kivumbasi) were the only economics grown. Leaves of Kivumbasi were sent for distillation to Pamplemousses.

A certain quantity of Pois Mascate, Pois d'Achery was sold or given free. Eddoes and Tannias were sent for propagation to 33 members of the public and estates. 11½ kilos of maize, were sent to various stations of the Department. Yam tubers, manioc cuttings, 214 kilos of coffee seeds and 2,650 seeds of peaches were sent to Barkly Experiment Station.

Barkly Experiment Station.—This Station was visited by many planters and other members of the public in order to buy plants, to obtain information and also to observe the different experiments in progress.

As in previous years, a large number of plants of Coffee, Cloves, Cocoa, Litchis Mangoes, Peaches, Figs, Citrus, etc., were raised in the Nursery.

A galvanised iron shed 40 feet long, 10 feet wide and 7 feet high was erected; it will be used for potting plants and as a shelter where labourers will be able to work during the rainy weather.

In order to encourage the cultivation of food crops, cuttings of sweet potatoes and manioc, tubers of Eddoes, Tannias and Yams, seeds of maize, Pigeon peas and ground nuts were distributed free in small quantities to any person applying for them.

Experiments were started with rice, both with local seeds and with new varieties received from abroad. Twenty three new varieties were introduced from Ceylon, Malaya Burma and Fiji.

The fruit trees which were planted in the orchard in previous years are making excellent growth; several varieties of peaches, avocado pears, mangoes, bananas, citrus and figs have started bearing fruit. A collection of new varieties of Loquats, Grape vines, Japanese persimon, Citrus, Mangoes, Pecan nuts, Litchis, etc. were planted during the year.

Small plots were planted with the following kinds of leguminous plants used as cover crops and green manure, viz: Centrosema pubescens, Calopogonium mucunoides, Pueraria Javanica, Dolichos Hosei, Phaseolus lunatus, Crotalaria usaramensis, Crotalaria juncea, Tephrosia Vogelii, Indigofera endecaphylla, Stizolobium deeringianum, Psophocarpus tetragonolobus.

123 kilos of seeds and 833 fruit trees, palms and other ornamental plants were supplied free to School Gardens, Beau Bassin Prisons, Public Works Department, Leper Asylum and other Government Institutions.

All the irrigation canals and ponds were repaired. A line of pipes was laid in Field 2 to provide water to irrigate this plot of land.

The Office and the quarters of the Overseer were repaired and painted. The roof of the Sirdar's hut was re-thatched.

Royal Botanical Gardens, Pamplemousses.—The Gardens were kept in good condition throughout the year. Two kiosks were completely repaired. The bridges, canals, lakes, lawns were attended to. All hedges and grass borders were regularly trimmed.

Plants and seeds were sent in exchange to Agricultural Departments in Réunion, Madagascar, United States of America, the Gold Coast and Egypt. They were also supplied to the other stations of the Department.

The Talipot palm which flowered last year is slowly dying.

The Junior Overseer, Mr. Boolkah, was promoted Overseer of Curepipe Gardens on the 14th May.

Cuttings of manioc and sweet potatoes, tubers of yams, seeds of leguminous plants were supplied free to many planters and other applicants.

189 mango grafts, 44 litchi layers and other fruit trees were sent to Barkly Experiment Station. 88 mango grafts and 76 litchi layers were supplied to Abercrombie Nursery for sale to the public.

Curepipe Gardens.—The Rosery was planted with many new varieties. A large number of wild roses were budded with a selected collection of the best varieties. A fine collection of Caladiums, Ferns, Amaryllis, Gloxinias was raised in the new greenhouse.

Hybrids of Gladioli, Cyrtanthus, Poinsettias, Amaryllis and Dahlias were obtained and propagated.

The roads, paths, hedges, lawns, kiosks, flower beds, etc. were maintained in good condition during the year.

The labourer's camp was transferred to a more suitable site obtained from the Forest Department. Advantage was taken of this transfer to erect a more comfortable and sanitary building for the men.

Abercrombie Nursery.—Many ornamental and economic plants were raised in this nursery. The plants sold were as follows:—

116 Litchi layers
91 Mango grafts and seedlings
300 Citrus plants
850 Coconuts and other palms
2,494 Miscellaneous plants

The revenue derived from the sale of plants amounted to Rs. 820.65.

As in previous years, plants were distributed to Government Institutions.

Stock Farm. Various animals were stabled at the Stock Farm: 1 Charolais cow, 2 Charolais bulls, 1 Charolais bull calf, 1 Hissar bull, 2 Hissar heifers, 1 Ongole cow, 1 working bullock and 1 Holstein Friesland bull, 1 Holstein Friesland bull calf.

The Charolais, Ongole and Hissar bulls were occasionally sent for service to different places.

At the close of the year, 7 Holstein Friesland cows were received from Curepipe Dairy.

Food Settlements, St. Martin. Plots were leased on this area and cultivated by shareholders of the local Co-operative Credit Society. The chief crops grown were maize, manioc sweet potatoes and vegetables.

School Gardens. Three new School Gardens situated at Petite Rivière Road, Poudre d'Or and Plaine des Papayes were registered during the year. This brings the total number of School Gardens to twenty eight.

These gardens were regularly inspected by Officers of this Department. Seeds, plants tools, manure, fencing material, etc. were supplied.

Prizes were awarded as follows:—

1st Prize of Rs. 50 to Christian Brothers School, Rose Hill.
2nd „ „ 40 to Church of England Aided School, Brisée Verdière.
3rd „ „ 35 to Roman Catholic Aided School, Old Grand Port.
4th „ „ 30 to Church of England Aided School, Highlands Road.
5th „ „ 25 to Government School, Souillac.
6th „ „ 20 to „ „ Quatre Bornes.

The following gardens although not entitled to prizes were specially commended:—

1. Government School Plaine Magnien
2. „ „ Rose Belle
3. „ „ Plaine des Papayes
4. Plaisance Orphanage, Church of England School
5. Church of England Aided School, Clairfond
6. Government School, Ruisseau Rose
7. „ „ Bambous
8. „ „ Beau Bassin
9. „ „ Crève Coeur
10. „ „ Camp Diable
11. Church of England Aided School, Floreal

Applications were received towards the end of the year from the Managers of the following Schools to have their Schools registered :—

1. Roman Catholic Aided School, Belle Rose
2. Peerun Aided School, Médine Camp de Masque
3. Government School, Grand River South East
4. „ „ L'Escalier

Experiment Stations. 95 tons of cane were cut at "Mon Plaisir" experimental plots and sold to Beau Plan Estate, 53 tons were obtained from the "Mon Rocher" varietal fields and sold to Belle Vue Estate. The most promising varieties were purchased by estates and planters at 10 cents per cane. A large number of cuttings were also sent for planting on the experimental fields under the control of the Department of Agriculture.

A special Planters' Day was held on the 23rd of July at Mon Plaisir, when about 100 persons interested in the Sugar Industry were present. The visitors were shown round the experimental fields by the Director of Agriculture and his staff and were greatly interested in the various crops. There was a great demand for the best varieties of seedling canes raised by the Department. Distributions of seeds of leguminous plants used as green manure were made to those who applied for them.

At the Central Experiment Station, Réduit, 167 tons of canes were sold to Trianon Estate.

C. A. O'CONNOR
Senior Agricultural Officer.

X

EXTRACT FROM REPORT ON FARM SCHOOL AND AGRICULTURAL CADETS

Farm School

Nine First Year pupils and six Second Year Pupils underwent training during the course of the year.

The standard of education of those applying for admission was very low.

The course of training provides for 28 hours practical garden work, two hours carpentry, two hours smith-work and ten hours class work per week.

Agricultural Cadetships

There were four cadets at the beginning of the year, two Second Year and two First Year Cadets.

One Second Year Cadet was appointed in December as Overseer in Rodrigues; the other being appointed Overseer Farm School in May.

Of the First Year Cadets one served as Assistant to the Overseer Farm School and the other as an extra overseer on the different experimental stations.

Up to now, the demand for candidates to fill junior posts in the Department has been in excess of the number of cadets trained.

XI

RODRIGUES, ANNUAL REPORT

CLIMATIC CONDITIONS

Rainfall

	Oyster Bay		Solitude		La Ferme	
	Inches	Rainy days	Inches	Rainy days	Inches	Rainy days
January ...	10.60	18	11.46	16	10.35	11
February ...	13.86	20	11.37	19	12.66	14
March ...	2.88	14	2.87	13	0.90	3
April ...	2.63	9	4.13	9	3.06	5
May ...	3.62	17	4.38	14	1.94	6
June ...	1.80	17	3.57	15	1.24	6
July ...	4.38	22	5.82	22	2.91	11
August ...	2.79	15	3.94	17	2.64	9
September ...	1.78	17	2.54	19	2.01	5
October ...	1.04	11	1.43	12	0.80	3
November ...	3.17	15	2.45	17	2.36	7
December ...	2.51	12	1.79	11	1.30	4
Totals ...	51.06	187	55.75	184	42.17	84

Highest Rainfall

On the 31st January 1930—Oyster Bay ... 4.30 inches
Solitude ... 4.02 „
La Ferme ... 4.29 „

The weather conditions experienced during this year must be regarded as distinctly favourable. The damage caused by the heavy rainfall occurring from the 30th of January to the 8th of February was slight.

No cyclones approached the Island during the year.

AGRICULTURAL CONDITIONS

Maize—was planted all the year round and yielded well.

Sweet Potatoes—were abundant.

Garlic and Onions—were planted on a smaller scale than in preceding years. The bulbs obtained were very fine.

Yams—planted by a few farmers gave very fine results.

Potatoes—planted on a small scale gave good yields.

Manioc—planting is slowly extending. No traces of the disease which destroyed this crop in 1926 were found.

Coffee.—The few farmers who have coffee trees on their lands obtained good yields. The plants distributed to planters by the Agricultural Department last year flowered in August and September.

Tobacco.—The low price obtained for local tobacco was the cause of farmers reducing the area planted. Mosaic disease affected many plantations. As ratoons are grown by most of the planters, the trouble is aggravated.

Acacia.—No seeds have been collected since July on account of the very low prices ruling for this cattle food. Traders experienced severe losses on this article.

Livestock.—The animals of the different herds have been kept in good condition. During the months of August and September a severe attack of Wire Worms destroyed a great number of goats on the South West Coast of the Island. Grazing on the Cattle Walk has been abundant.

EXPERIMENT STATION

The heavy rainfall of January and February damaged Plots A and C of the Experiment Station and also the bridge at the entrance.

FOODCROP EXPERIMENTS

Experiments were carried out at the Experimental Station with the following economic crops with a view to testing yields and suitability for local conditions :—

Manioc.—Planted in September 1929. Reaped June to August 1930.

Variety	Yield per acre	Variety	Yield per acre
Albert	9,432 lb.	Constantin	6,160 lb
No. 29	2,598 ,,	Cabissa Dura ...	4,455 ,,
Pacho 3	4,331 ,,	Cassava Bureum ...	8,745 ,,
Rodney	5,733 ,,	Butter Stick ...	4,565 ,,
Trinidad 3	4,450 ,,	Manioc de Table No. 1 ...	8,910 ,,
Singapore	5,898 ,,	Blue Top	6,380 ,,
Federated Malay States ...	3,850 ,,	Blancite	6,050 ,,
Australie	7,095 ,,	Negrita 12	4,895 ,,
Negrita 15	7,370 ,,	Paloma	5,445 ,,
Smallings	7,865 ,,	Bitter	4,125 ,,
Trinidad 2	6,050 ,,	Manioc de Table No. 2 ...	3,877 ,,

Manioc de Table No. 2 was damaged by the heavy rainfall.

Yams.—Planted in October 1929. Reaped in August 1930.

Variety	Yield per acre	Variety	Yield per acre
Cush	16,830 lb.	Bottle Neck ...	16,087 lb.
Light Red	10,447½ ,,	Crop	15,097 ,,
Oriental	14,437½ ,,	Bugle Horn	11,880 ,,
Lisbon	14,355 ,,	Danish	19,800 ,,
Horn	14,231 ,,	Mixed	17,490 ,,
Sealed Top ...	18,975 ,,		

Planted in November and December 1929. Reaped in October 1930.

Variety	Yield per acre	Variety	Yield per acre
Fugue	18,432 lb.	Cush Cush ...	11,583 lb.

Pistache.—Planted in November 1929. Reaped in August and September 1930.

Variety	Yield per acre	Variety	Yield per acre
Virginia bunch ...	1,980 lb.	Virginia	2,420 lb
Local	3,795 ,,	Spanish Pea Nut ...	1,715 ,,
Bunch	2,970 ,,	Gambia	2,442 ,,
Refusque	1,188 ,,	Tennesse	825 ,,
Virginia Running ...	1,540 ,,		

Ginger.—Planted in November 1929. Reaped in August and September 1930.
Yield 136 lb. Yield per acre : 1,183 lb.

Saffron.—Planted in November 1929. Reaped in September 1930.
Yield 450 lb. Yield per acre : 5,500 lb.

Tannia.—Planted in November 1929. Reaped in November 1930.

Variety	Yield per acre	Variety	Yield per acre
Blanca	15,950 lb.	White	18,810 lb.
Bolizar	15,290 „	Blanche	11,825 „
Yellow	22,385 „	Priest	19,635 „

Eddoe.—Planted in November 1929. Reaped in November 1930.
Variety : Dasheen. Yield per acre : 9,625 lb.

Wheat.—Planted in Plot H in April 1930. Harvested in September 1930.
Yield : 334 lb. Yield per acre : 668 lb.
The yield should have proved much better if the ears had not been damaged by birds and mice.

Sweet Potatoes.—Planted in January 1930. Reaped from May to September 1930.

Variety	Yield per acre	Variety	Yield per acre
Turkey Claw	10,340 lb.	Pierson	19,965 lb.
d'Arifat	18,480 „	T. 4	9,625 „
Georgia Jam	12,320 „	Red Bermuda ...	19,360 „
Seely seedling... ...	13,090 „	Joes	14,630 „
Sully	10,120 „	Spooner	13,475 „
No. 4	10,395 „	Ducray	15,400 „
Egyptian White ...	15,455 „	Mirbelle	11,825 „
Barbados Barrel ...	15,730 „		

Maize.—Variety : Red Flint. Planted in March 1930. Reaped in July 1930.
Yield : 697 lb. Yield per acre : 1,394 lb.

NURSERY WORK

Pine-apples.—A few plants of the Queen variety gave very fine fruits.

Vegetables such as Onions and tomatoes have grown well.

Citrus aurantium and Citrus Nobilis obtained from local seeds have been placed in grass pots, as also have the *Papaya* plants grown from Mauritius seeds.

Latania Verschaffeltii, Loddigessii and Commersonnii, seeds received from Mauritius have germinated well.

Coconuts.—Approximately 100 were planted.

ORCHARDS

Most of the Mango trees have fruited, chiefly the variety " Maison Rouge."

One of the Lemon trees fruited for the first time this year.

The Mandarins and Letchis flowered.

The two Bread fruit trees and the " Fruit de Cythere " planted in 1929 are doing well.

Chinese Shaddock, Avocado pear, Loquat, Rima and Longan are doing well.

Of the 16 Pecan nuts planted along Plots A and C, 6 were washed away during the heavy rains of January and February last.

The Chaulmoogra (Taraktogenos Kurzii) plants are doing well.

Plantation at Oyster Bay

One acre of land East of the Station is being planted with Citrus trees and another acre with Cocos Nucifera, Latania Verschaffeltii and Hyophorbe sp. To assist in keeping this area clean, a tree-lease for the two acres was granted to two farmers, permission being given to cultivate in the interlines.

Fruit trees and ornamental plants received from Mauritius and planted in the vicinity of the Station are growing well.

STOCK FARM

Cattle

Sindhi.—Births : 2 Bull calves. Death : 1 Old Bull " Rajah."

Several calves suffered from eye trouble, apparently " Keratitis " and were treated three times daily with a solution of Boracic acid and kept in a dark room until cured.

Number of services : 13.

Present numbers : Bulls 2. Cows 2. Heifer 1. Calves 2. Total 7.

Holstein Friesland.—Imported from Mauritius in 1929.

Deaths : 2 heifers.

One died from worm infection and the other from pneumonia with adherence of the pleurae to the thoracic walls.

The bull and these two heifers had been kept apart from the herd since their arrival. When the heifers showed signs of disease, they were placed in quarantine. The bull was treated with Tuberculin and found to be free from tuberculosis.

Donkeys

Catalonian.—Births : 10. 8 Jacks and 2 Jennies. Deaths : 4 Jennies. Sold : 1 Jack for Rs. 50.

Present numbers ; 14 Jacks and 16 Jennies.

These donkeys have kept in good condition.

Pigs

Large Black.— Births : 5. 2 Boars, 3 Sows. Deaths : 4. 3 Boars, 1 Sow.

Sold : 1 Boar and 4 Sows for Rs. 59.

One boar died of Pyelo-Nephritis and the two others whilst young of auto intoxication. The sow died from " Strongylosis." The sties after the deaths of these animals were thoroughly disinfected.

No pigs are allowed to run into the enclosure infested with Strongylidae.

Present number : Boar 1. Sow 1.

Number of services : 30.

Large White.—Births : 9 : 4 Boars and 5 Sows. Deaths : 3 soon after birth.

Sold : 1 boar for Rs. 10.

Present numbers : Boars 4. Sows 4.

Number of services : 40.

Large White X Large Black.—Births : 5. 2 Boars and 3 Sows. Deaths : Nil.

Sold : 3 boars and 1 sow for Rs. 22.

Present numbers : Boar 1, Sows 3.

The pigs are in good condition.

Sheep

Nigerian.—Births : 3, 2 rams and 1 ewe. Deaths : 14, 2 rams, 8 ewes and 4 castrated rams.

Sold : 13 ewes and 11 rams for Rs. 38.

This breed which does not thrive well locally is being given up and replaced by the Black Head Persian breed.

Black Head Persian.—In order to improve the local breed of sheep, two stud rams of the above breed have been imported.

A pen has been built for them at a spot where other sheep and goats have no access.

Bourgault's Fly Trap

This Fly Trap proved very successful against the cattle fly (Stomoxys nigra), 678,300 flies being captured in February and March. In April the number of these insects had been greatly reduced and the daily captures small. It was noticed during these months that whilst animals were disturbed by a great number of flies in the other localities, only a few flies were to be seen on the herds at the Stock Farm.

No results were obtained against the Common House Fly which are still found in great numbers on the animals.

Poultry

Black Orpington.—By cross breeding with local poultry a certain number of chicks obtained.

Sold : 22 for Rs. 7.

The birds have not thrived well in Rodrigues.

Rhode Island Red. Sold : 11 chicks for Rs. 2.75.

A severe attack of Chicken Pox from October to December destroyed a number of chicks.

Present numbers : 2 cocks and 5 hens.

Pheasants.—The eggs obtained in November and December and placed under sitting hens did not hatch. One of the hens is still laying. Present number : 2 cocks and 2 hens.

Pig raising in open

Mr. P. Allas was granted in 1928 a special lease of 40 acres of land to breed pigs. No progress has been made during the present year. Only a few pigs were kept and these did not propagate to any extent.

Animal Diseases

Strongylosis.—An attack of Strongylosis occurred on pigs kept in a run belonging to Xavier Raffaut at Bigarade. Two of the diseased animals were transferred to Oyster Bay, to prevent the spreading of the infection, Raffaut was induced to destroy the animals.

The sties were disinfected in presence of the Agricultural Superintendent, and the run at Bigarade is no longer used.

Wire Worm —A severe attack of Wire Worm caused the deaths of a great number of goats on the South West Coast of the Island. The Government Veterinary Surgeon visited the Island in September and advised on the preventive measures to be taken.

Keratitis.—Cases of Keratitis were detected on young cattle chiefly during the months of March and April. In most of the cases the Agricultural Superintendent visited the herds and demonstrated the treatment to be given.

WORK DONE AT THE EXPERIMENT STATION

The bridge at the entrance of the Station was rebuilt.

The Overseer's quarters have been entirely restored.

The roofs of the tools shed, barn, pig-sties were repaired.

The servants' quarters of the Superintendent's house were rebuilt.

A drain to prevent damage in case of heavy rains was dug on the North East side of the Station.

Part of Plot D was terraced in front of the Store and Barn.

A pen with shed was built for the Black Head Persian Rams.

Another pen with shed was also built to keep the ewes received at the Stock Farm for services.

The Latanier leaves on roof and sides of the Fly Trap have been replaced by sheets of galvanised iron and boards.

A demonstration plot for Coffee has been established on both sides of the entrance of the Station.

The Pass leading to the jetty was dredged.

REAFFORESTATION

Block I Solitude.—Plantation made on hill tops above springs supplying water to Port Mathurin.

As wind break : 1,488 Casuarina equisetifolia, 1,455 Callophyllum inophyllum, 1,500 Swietenia mahogani, 1,330 Terminalia catapa, 700 Bassia latifolia, 400 Elaecocarpus serratus, 300 Albizzia lebbeck, 14,966 Imbricaria coriacea, 205 Eugenia jambosa, 179 Terminalia benjoin, 195 Artocarpus integrifolia.

Recruiting in old plantations : 529 Eucalyptus tereticornis.

One cleaning of the plantations was made and a second one begun.

Block III La Ferme.—Establishment of river reserves about water supply to La Ferme Planted :—875 Terminalia arjuna, 4,882 Eugenia jambosa, 75 Artocarpus integrifolia.

Planted in tree leases as shade trees in the Cattle Walk and along Pistache river reserves.

Piments : 2,800 Eucalyptus tereticornis, 480 Casuarina equisetifolia.

La Ferme : 61 Casuarina equisetifolia, 268 Terminalia arjuna, 13 Mangifera indica, 13 Artocarpus integrifolia.

Manique : 372 Terminalia arjuna.

RECRUITING

La Ferme : 421 Casuarina equisetifolia, 299 Terminalia arjuna.

River Reserves : 392 Eugenia jambosa.

The trees are growing well.

Two cleanings of the plantation were made and another is being effected.

"*Acacia*" *plantation at Citronelle,*—(Leucaena glauca)—About 3 acres of land in the Cattle Walk at Citronelle were planted with Acacia. Seeds were sown in rows, 6 feet apart. The germination was very good but the lack of rain experienced in this locality from the end of September to the 15th of November caused all the young plants to die.

Latania at Oyster Bay.—Latania Verschaffeltii and Latania Loddigessii seeds received from Mauritius have been sown on about 5 acres of land leased to Isaie Roussety at Oyster Bay.

Vanilla.—The results obtained with vanilla were satisfactory. About 9,000 were cured by the hot water process and will be shipped to Mauritius.

The plantation made at Mt Lubin in 1929 is doing well but the plants have not yet flowered.

Coffee.—The 202 plants distributed to 18 farmers in 1929 have been properly cultivated and have done well.

4,456 plants were distributed to 96 farmers this year, and about 15,000 plants prepared for distribution next season.

The few full grown trees existing in Rodrigues have yielded well. Farmers to whom plants have been distributed have planted them near their houses or along the boundaries of their plantations.

Lands have been offered by Government, at a nominal rent, for coffee cultivation but farmers do not seem willing to plant this crop on a large scale if they are not allowed to grow catch crops in the interlines.

Demonstration Plots.—266 plants of local coffee and 161 plants of Coffea Robusta and Coffea Congoensis were planted on the demonstration plot prepared at Oyster Bay. 30 plants of the latter died and most of the others showed leaf disease, the Robusta and Congoensis plants were therefore uprooted and burnt. Some plants showing the above mentioned leaf disease were sent to Mauritius for examination but no disease was detected. The local coffee is doing very well.

Forest Nurseries.—Plants planted in grass-pots : 14,300 Terminalia catapa, 450 Artocarpus integrifolia, 1,400 Terminalia arjuna, 600 Prosopis juliflora. Beds sown : 1 bed Casuarina equisetifolia, 8 beds Callophyllum inophyllum, 5 beds Elacocarpus serratus, 4 beds Vitrex sp., 11 beds Terminalia arjuna, 1 bed Artocarpus integrifolia.

Five beds of Junipers sown in April. Germination : Nil.

La Ferme.—Plants planted in grass-pots :—2,000 Imbricaria coriacea, 1,200 Terminalia catapa, 1,000 Prosopia juliflora, 400 Terminalia benjoin, 350 Eugenia jambosa, 2,600 Terminalia arjuna, 750 Casuarina equisetifolia.

In earth balls : 11,000 Casuarina equisetifolia.

Bed sown : 15 beds Terminalia arjuna, 1 bed Terminalia benjoin.

Coconut Plantation.—Four of the trees planted in 1929 in the leases granted to Ah-Wye have been washed away by the floods during the heavy rains at the beginning of the year. The other trees are doing well.

The plantations at Anse Ali and Anse Quitor leased to P. Allas are doing well. The trees at Port Mathurin which had been damaged by the cyclones in 1929 have recovered.

The trees planted in Sandy Island in 1928 and 1929 are doing well.

A few trees at Oyster Bay bore nuts for the first time this year. The plantation is doing well, except for a few trees growing in water-logged soil at the entrance of the Station.

Yams.—Of the twenty-eight farmers who planted the tubers distributed to them in 1929, twenty-four obtained very good yields and replanted these yams on a larger scale. These results caused others to plant this crop for trial. Tubers for planting 3,500 pits have been distributed to sixty-seven farmers who have prepared their lands according to the advice given by the Agricultural Superintendent and in many cases under his supervision.

Trees and Seeds received from Mauritius.—18 Artocarpus incisa, 10 Nephelium litchi, 12 Taraktogenos Kurzii, 15 Araucaria Cunninghamii, 4 Aberia Gardeneri, 6 Anarcardium occidentale, 12 Citrus sp (Chinese shaddock), 12 Persea gratissima, 2 Artocarpus sp (Rima), 2 Grape vines, 6 Queensland Raspberry, 6 Carissa grandiflora, 2 Mulberry plants, 2 Baccaurea sylvestris, 6 Tabebuia pentaphylla, 4 Cassia multijuga, 3 Amomum Cardamon.

Seeds.—Junipers 50 lb, Terminalia catapa 1 bag, Latania Verschaffeltii 1 packet, Latania Loddigessii, 1 packet, Latania Commersonii 1 packet, Voandzeia Madagascariensis 2 lb, Bombax edulis 1 packet, Carica papaya 3 packets, Soya Hispida 2 packets, Rice about 15 lb

Seeds sent to Mauritius.—200 Sweet Citrus.

Seeds sent to St. Helena Island.—10 lb Leucaena glauca, 2 lb Imbricaria coriacea.

Trees distributed.—957 Casuarina equisetifolia. 18 Araucaria Cunninghamii, 3 Elaeocarpus serratus, 3 Bassia latifolia, 23 Artocarpus integrifolia, 534 Eucalyptus tereticornis, 3 Eriobotrya Japonica, 7 Carica papaya, 7 Nephelium longan, 2 Anona reticulata, 2 Anona squamosa, 1 Aberia Gardeneri, 3 Persea gratissima, 1 Casrissa arduna, 2 Citrus sp (Chinese Shaddock), 6 Nephelium litchi were distributed to forty-six planters.

Manioc cuttings for planting about 6,500 holes were distributed to 100 farmers. Cuttings of different varieties of sweet potatoes and cobs of selected maize were also distributed.

School Garden.—The school garden at St. Gabriel was properly kept during the year and the vegetables planted thrived well. The Magistrate arranged a regular water supply by placing a wind mill over the well.

This has proved very useful as foodstuffs can be grown now even during the dry season.

A very fine vegetable garden was established by the Superintendent of the Eastern Telegraph Company and also by the Magistrate.

Sale of Forest Produce.—The sale of forest produce amounted to Rs. 1,729.39 cs.

Sales from Experiment Station and Stock Farm

	Rs. cs.
25 Eucalyptus plants	.50
67 „ trees	27.75
Pigs	91.00
Maize	4.07
Eggs (not fertile)	1.20
Poultry	9.75
Onions	.60
Ginger	1.65
Manioc	25.38
Sweet Potatoes	.80
Vanilla	25.00
Beans	2.31
Pineapple	1.00
Eddoes and Tannias	2.66
Sheep	38.00
Boards	12.96
Donkey	50.00
Filao	8.84
Coffee	9.04
Bois Noir trees	4.50
Bois d'olive	.50
Dry Firewood	9.20
Carried over ... Rs.	326.71

	Rs. c.
Brought forward ...	326.71
3 filaos and 1 jamblon branch	1.00
Acacia	.56
Litchi layers	8 00
Bread fruit tree	9.00
Araucaria	.20
Avocado pear	.50
One Chinese Shaddock	.25
Aberia Gardenerii	.25
Rent of land	5.00
Vegetable seeds	2.00
Rs.	353.47

Land Tenure.—From January 1st to December 31st :—

187 applications were received for 149 agricultural leases, 5 tree leases, 31 cattle posts, 3 fishing posts, 6 shop sites and 25 residences.

198 leases were signed.

AGRICULTURAL SOCIETY

A meeting was held in April to bid good bye and welcome Mr. Colin and Mr. Brouard the retiring and incoming Magistrates.

An address was read and Messrs. Colin and Brouard thanked the members of the Society and spoke on the necessity of employing modern methods for the cultivation of their lands.

TREFLES CO-OPERATIVE SOCIETY

A sum of Rs. 43.95 cs. as instalments due to Government has been paid.

Five loans amounting to Rs. 250 have been granted.

Interests amounting to Rs. 53.94 cs. have been paid in.

Rs. 246 were paid for loans refunded.

Cash in Bank and in hand on 31.12.29. ...	Rs. 9.66 cs.
Receipts	299.94
	309.60
Expenses	293.95
Cash in Bank and in hand	Rs. 15.65

During the absence of the Secretary, Mr. D. Albert, from 25.10.30 to 31.12.30, the Secretaryship was fulfilled by the Agricultural Superintendent.

EXPORTS

Acacia seeds (Leucaena sp) ...	10,944 bags	Salt fish ...	2,281 bags
Pigs	1,353	Cuttle Fish ...	728 „
Goats	1,662	Sheep ...	409
Bullocks	246	Tobacco ...	347 bales
Beans	1,042 bags	Maize ...	753 bags
Hides	15 bales	Peas	29 bags
Garlic	197 bags	Gum	18 bags
Bees Wax	1 case	Mother of Pearl ...	40 bags
Onions	10 bags	Lemon Juice ...	1 tierce

In the above is not included the products ready for export in December—no boat being available.

No exports of goats were made by the September boat on account of the Wire Worm infection.

VISITS

The Island was visited by two members of the staff of the Mauritius Agricultural Department, Messrs. Lionnet and Vinson. They were received at Oyster Bay and every assistance was given to them during their stay in Rodrigues.

Mr. Vinson, the Scientific Assistant in the Entomological Division, spent three months in Rodrigues enquiring into the habits of the Lachnosterna beetle and its natural enemies and of the damage caused by the different insect pests existing in Rodrigues.

Lectures and demonstrations on the spraying with insecticides were given at La Ferme and St. Gabriel. This resulted in several demands being received by the Agricultural Superintendent to help in the destruction of caterpillars which affected the tobacco plantations at La Ferme. By spraying with Lead Arsenate, good results were obtained.

STAFF

Mr. Yves Goodsir, Overseer of the Experiment Station and Stock Farm, resigned his duties on the 31st of October last. Mr. S. Oree, Cadet of the Agricultural Department, was appointed to replace him.

Stockman Charles Augustin Pierre was dismissed for neglect of duty and Davidson Leveque was appointed Stockman as from the 1st of December.

R. JAUFFRET,
Acting Agricultural Superintendent.

PART III

MISCELLANEOUS

STAFF CHANGES

Mr. D. d'Emmerez de Charmoy, Director and Entomologist of the Department of Agriculture, died on the 20th November after a short period of leave. Mr. A. G. G. Hill, Plant Breeding Officer and Senior Geneticist, acted as Director as from October 1st until the end of the year.

Mr. A. G. G. Hill, transferred from Nigeria, assumed duty as Plant Breeding Officer and Senior Geneticist on the 14th January and took charge of the Sugarcane Research Station which opened on 15th January 1930.

Mr. A. G. G. Hill left Mauritius for Java on the 25th February returning to Mauritius on the 22nd May. During his absence Mr. N. Craig, Bio-Chemist, took charge of the Station.

Mr. N. Craig was appointed Bio-Chemist to the Sugarcane Research Station and assumed duty on the 15th January.

Messrs P. Halais, G. Mazery and A. d'Emmerez de Charmoy were appointed Scientific Assistants in the Sugarcane Research Station. Mr. Halais assumed duty on the 15th of January and the two other officers on the 22nd of April.

Mr R. Lincoln, Assistant Chemist, proceeded to Europe on leave of absence on the 5th of September, Mr. F. Berchon, Senior Scientific Assistant, replacing him while Mr. Jean Halais was appointed temporarily to replace Mr. Berchon.

Mr. E. F. S. Sheperd, Botanist and Mycologist, left on the 4th of October on a mission to Australia and Java, Mr. G. Orian, Plant Inspector, taking charge of the Mycological Division in his absence.

Mr. A. Moutia, Assistant Entomologist, took charge of the Entomological Division on the death of Mr. D. d'Emmerez de Charmoy.

Mr. E. Gregoire joined the Department on the 1st of January as Chief Clerk vice Mr. J. H. Nicolin transferred to the Treasury.

Mr. W. Bourdet who was acting as clerk in the Procureur General's Department returned to this Department on the 3rd of January.

Mr. P. Regnard, Officer in charge Phytalus Destruction Moka-Flacq acted as Private Secretary to the Officer Administering the Government from the 10th March to the 6th September and was replaced by Mr. M. Rivalland during that period.

Mr. H. Baichoo, Overseer Curepipe Gardens, died on the 24th March, Mr. Boolkah, Assistant Overseer Royal Botanical Gardens Pamplemousses, was appointed Overseer and transferred to Curepipe.

PUBLICATIONS

The following publications were issued during the year :

Bulletins

(*a*) Flies injurious to domestic animals in Mauritius.

(*b*) The Sucrose Content of the Cane expressed in Terms of Air Temperature and Soil Moisture.

(*c*) Le Charançon du Bananier.

REPORTS

(*a*) Annual Report of the Department of Agriculture for 1929.

(*b*) Report on the working of Co-operative Credit Societies for the year ended 30th June 1930.

(*c*) Report by Mr Louis Baissac on his mission to Java. (price 50 cents per copy)

(*d*) Report on the operations for the control of Phytalus Smithi (Arrow) during the season 1929-30.

(*e*) Report on a visit to the Proefstation Oost-Java in March-April 1930 by A. Glendon Hill.

(*f*) Agricultural Census in Mauritius, 1930, compiled by Mr M. Kœnig.

The following articles from officers of this Department were published in the Revue Agricole :

Le Recensement Agricole	M. Kœnig
Le Phytalus Smithi : Lachnosterna Smithi... ...	D. d'Emmerez de Charmoy
Fumier Artificiel	R. Lincoln
Richesse de la Canne	M. Kœnig
La Saison Culturale 1929-30 et les Pronostics pour la Recolte prochaine	M. Kœnig
Au sujet de la Conservation et de la Polarisation des Sucres Roux	L. Baissac

LEGISLATION

The following Ordinances, Proclamation and Notifications were issued during the year :—

Ordinance No. 27 of 1930—To amend the Animal Diseases (Consolidation) Ordinance 1925.

Ordinance No. 38 of 1930—To provide for the control of the Production and Sale of Leaf Tobacco in the Colony.

Proclamation No. 20 of 1930—To prohibit the exportation of Fourcroya (Mauritius Hemp) bulbils.

Government Notification No. 114 of 1930—Prohibition of importation of Raw Leather from Madagascar except Vohemar.

Government Notification No. 150 of 1930—Regulations made under The Tobacco Ordinance, 1927.

BOARD OF AGRICULTURE, MEMBERS OF :

The Board of Agriculture established under Ordinance 30 of 1912 consists of :—

His Excellency the Governor—President

The Director of Agriculture—Vice-President

The following members were appointed for 1930 :—

The Honourable Louis Espitalier-Noel
" " M. Martin, C.B.E.
" " R. Gujadhur
" " H. G. Hitchcock, Captain, M.B.E.

Jules Leclézio Esquire,
Edouard Rouillard Esquire,
J. A. Duclos Esquire, C.M.G.
G. Antelme Esquire,
G. Clarenc Esquire,
J. de Spéville Esquire,
L. H. de Froberville Esquire,
H. G. Ducray Esquire,
Gabriel Régnard Esquire,
George Mayer Esquire,
Pundit Boleram Mookteram,
Pierre Montocchio Esquire,
F. A. Nicholls Esquire,
Pierre de Sornay Esquire.

There was no meeting of the Board in 1930.

During the year one of the members, Mr. Edouard Rouillard, died and was not replaced.

GENERAL

Mr. D. d'Emmerez de Charmoy, the late Director of Agriculture, served as a nominated member of the Council of Government. The Director of Agriculture also acted as Chairman of Agricultural College Board, the Phytalus Advisory Committee, the Exhibition Committee, the Stock Breeders Subsidising Fund Committee, the Subsidiary Industries Committee, the Soils Advisory Committee, and Vice-President of the Board of Agriculture.

The Director also served on the following boards and committees :—the Board of the Mauritius Institute, the Forest Board, the Mauritius Hemp Producers' Syndicate (Executive Committee), the Stock Breeders Association, the Permanent Advisory Committee for the Development of the Marine Resources of the Colony and the Société Royale des Arts et des Sciences.

EXPENDITURE

Department of Agriculture	Rs. c.
Personal Emoluments	128,361.38
Maintenance of Gardens	12,560.90
General Services	14,14.57
Prevention of Plant Pests and Diseases	18,59.91
Prevention of Animal Diseases	1,886.02
Upkeep of Stock	810.76
Subvention to Société Horticole	500.00
Travelling expenses	13,685.46
Maintenance of Experiment Stations	18,440.88
Apparatus, Chemicals and Laboratory Supplies	2,926.38
Nursery for the distribution of economic plants	2,960.19
Destruction of Phytalus Smithi	106,040.00
Contribution to La Revue Agricole	500.00
Telephones	556.43
Services rendered by the Railways	11,943.70
Remuneration to Secretary Board of Agriculture	150.00
Examination for the Registration of Chemists	100.00
Minor Industries	20,545.64
Government Dairy	33,521.29
Agricultural Instruction	.77
Expenses in connection with Mr. Ashby's visit to the Colony ...	10.00
British Industries Fair	428.42
Carried over ... Rs.	359,202.70

	Rs. c.
Brought forward ...	359,202.70
Rice Cultivation	2,315.20
Irrigation in the Northern districts	500.47
Stock Breeders Subsidizing Fund	1,035.27
Sugarcane Research Station :	
Extra Clerical Assistance	249.96
Upkeep of Laboratories and Contingencies	212.07
Travelling expenses and Services rendered by the Railways ...	566.44
Farm School :	
Allowance to pupils	2,779.30
Subsistance allowance	164.00
Contingencies	145.53
Allowance to Agricultural Cadets	1,341.12
Total Rs.	368,512.06

REVENUE

	Rs. c.
Sale of Plants	3,364.25
Sale of Stock	114.00
Sale of Cane Cuttings	56.15
Analytical fees	261.00
Sale of tobacco leaves	582.81
Sale of tobacco seeds	42.84
Sale of pineapple suckers	65.00
Sale of Soamin	68.00
Sale of B C.G. Vaccine	773.80
Sale of rice seed	503.87
Registration fees on Tobacco Plantations	1,265.00
Sale of Produce from Experimental Dairy	26,285.74
Miscellaneous	2,971.85
Contribution from Co-operative Credit Societies	1,310.00
Total Rs.	37,664.31

PART IV

APPENDICES

APPENDIX I

Station	Réduit, Department of Agriculture						Curepipe, Botanical Gardens					Beau Bassin, Barkly Experiment Station					Port Louis, Abercrombie Nursery		Pamplemousses R. Botanical Gardens	
Element / Month	Mean Air Temperature			Rainfall		Relative Humidity	Mean Air Temperature		Rainfall		Relative Humidity	Mean Air Temperature		Rainfall		Relative Humidity	Rainfall		Rainfall	
	Min.	Max.	Mean	Total depth of rain	No. of days		Min.	Max.	Total depth of rain	No. of days		Min.	Max.	Total depth of rain	No. of days		Total depth of rain	No. of days	Total depth of rain	No. of days
	°C	°C	°C	mm.		%	°C	°C	mm.		%	°C	°C	mm.		%	mm.		mm.	
January ...	20.9	26.6	23.2	242.3	20	79.4	19.6	23.1	730.5	31	90.7	21.9	28.8	162.8	9	74.7	205.6	18	238.2	21
February ...	20.7	27.5	23.6	178.4	17	81.1	19.3	23.5	669.2	28	89.7	21.3	28.9	102.0	10	78.6	103.0	14	218.3	18
March ...	19.4	27.4	22.8	98.2	11	75.6	19.0	23.1	281.0	30	87.0	20.7	29.6	38.5	3	78.6	42.6	10	29.8	10
April ...	18.2	26.7	21.8	53.4	9	73.6	17.6	22.3	170.0	22	87.3	19.5	31.1	71.4	3	80.5	25.5	7	61.0	8
May ...	17.2	24.1	20.2	52.8	13	76.9	16.5	20.5	156.8	29	87.5	17.2	30.5	56.9	4	79.8	80.1	9	62.5	11
June ...	14.3	22.2	17.9	51.4	9	76.7	14.2	18.1	162.3	27	88.0	17.4	29.2	25.5	2	75.9	55.5	6	75.0	13
July ...	14.8	21.8	17.9	43.9	15	80.1	14.2	18.0	204.2	29	87.8	17.1	27.6	35.9	2	74.8	38.4	9	48.2	11
August ...	14.0	20.9	17.1	43.8	14	74.8	13.4	17.1	202.2	28	86.3	16.6*	27.4	47.6	3	83.0	16.7	11	37.5	10
September ...	16.1	23.0	19.1	52.1	10	71.7	14.9	18.9	271.5	28	88.1	16.6	26.6	30.0	5	72.4	68.2	14	70.0	15
October ...	16.2	24.1	19.7	60.7	9	65.8	14.9	19.9	108.5	20	81.4	17.6	28.8	53.2	4	68.0	46.1	6	71.8	6
November ...	18.3	26.3	21.5	66.5	12	70.3	17.1	22.1	161.0	23	82.0	18.5	29.1	35.5	2	76.4	122.5	14	57.9	13
December ...	19.9	28.3	23.3	162.8	15	64.5	18.6	23.5	242.8	23	80.0	*	29.1	117.0	5	72.0	87.2	10	67.5	15
Means ...	17.5	24.9	20.7	1,106.3	154	74.1	16.6	20.8	3,352.0	318	86.3	...	28.9	776.3	52	76.2	891.4	128	1,037.7	151
				Totals					Totals					Totals			Totals		Totals	

* Uncertain.

REMARKS.—Air temperature at Réduit is obtained from the hourly measurements of thermographs standardised daily at 9 h. and 15 h. Relative humidity is obtained from readings of the dry and wet bulb thermometers at 9 h. and 15 h. Rainfall is measured every day at 7 h. For the other stations, maximum and minimum thermometers, dry and wet bulb are read daily at 9 h. and 15 h. and rainfall measured at 7 h. daily.

APPENDIX II.

CANE DISEASE SURVEY—1930

Canes examined at Mill Carriers

District	Number of Estates examined	White Tanna					D K. 74					M. 131					M. 55					R. P. 8					D. 109				
		Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers	Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers	Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers	Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers	Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers	Exuding gum	Not exuding gum	With stem deterioration	Red Rot	Borers
Early part of Crop.		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Pamplemousses ...	3	5.4	2.2	73.4	3.1	32.0	...	...	.4	.8	63.2	.4	...	.2	.4	22.3	1 8	...	11.8	1.2	45.6	.3	3.0	...	1.3	41.0	...	...	...	...	...
Rivière du Rempart ...	4	4.3	2.6	61.1	2.8	38.0	.4	2.2	.2	4.4	16.8	3.0	...	4.0	4.0	49.0	2.2	1.1	9.7	1.3	33.3	1·5	2.1	1.9	.6	34.3	2.3	.1	18.3	2.9	56.0
Flacq	6	8.1	4 2	51.7	2.6	12.5	2.0	.7	6 3	4.6	23.7	2.2	3.1	.4	4.7	31.4	1.6	1.6	1.6	1.6	33.6	...	...	...	...	...	...	...	...	...	...
Black River ...	1	3.1	3.1	50.9	3.1	22.1	...	...	1.0	5.0	36 0	...	...	...	...	...	7.0	...	2.0	2.5	46.2	...	...	...	...	...	...	...	...	...	...
Grand Port ...	9	9.8	12.7	46.3	2.3	13.5	.7	2.1	.3	6.5	34.5	3.2	4.3	.3	...	21.9	5.6	6.5	.5	1.8	30.1	1.8	1.8	...	...	22.7	...	...	...	...	...
Savanne	7	9.7	9.0	40.9	.6	12.0	1.7	1.2	3.0	1.7	28.2	4.0	1.3	.8	2.5	24.2	2.0	.2	1.4	.8	29.4	...	...	...	...	...	...	...	...	...	...
Moka	3	2.2	7.0	29.0	1.5	17.0	...	..	...	...	...	...	...	...	...	...	6.0	...	3.5	1.7	12.1	...	...	...	...	...	...	...	...	...	...
Plaines Wilhems ...	3	10.7	10.0	38.0	3.9	19.0	2.9	2.6	3.9	3.9	24 7	11.0	9.0	...	1.0	4.0	6.4	9.5	2.6	1.5	30.0	...	...	...	...	...	...	...	...	...	...
Mean	...	7.7	8.0	46.3	2.1	16.7	1.4	1.4	2.5	3.7	29 6	3.0	2.4	.6	2.2	25.6	4.4	3.7	3.4	1.5	32.1	1.1	2.4	1.0	.8	35.1	2.3	.1	18.3	2.9	56.0
Late part of crop.																															
Pamplemousses ...	2	...	...	...	...	...	...	...	...	..	...	.4	2.1	1.4	.4	26.0	1.9	3.1	19.7	.8	35.0	...	...	...	...	...	...	...	...	...	...
Rivière du Rempart ...	1	2.0	14.0	60.6	.6	48.0	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Flacq	5	11.3	2.6	47.3	1.6	16.4	.6	...	3.4	3.4	35.3	3.1	...	.3	5.1	33.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Black River ...	1	...	...	...	...	..	...	...	...	4.1	30.0	11.5	2.3	...	.7	28.4	1.8	.6	...	...	10.6	...	...	...	...	...	...	...	...	...	...
Grand Port ...	6	14.7	12.0	38.5	3.1	17.4	...	...	...	...	...	.6	1.3	...	2.0	28.0	12.9	1.3	5.3	5.3	40.0	...	...	...	...	...	...	...	...	...	...
Savanne	6	7.7	8.0	44.0	2.1	17.4	.5	.8	.8	8.7	39.1	2.4	2.1	.4	1.2	23.8	3.0	..	8 0	5.0	27.0	6.0	8.0	2.0	...	24.0	...	...	...	...	...
Moka	2	1.2	10.0	38.0	4.0	13.2	...	...	...	...	...	...	...	...	...	...	.6	11.3	.6	...	26.6	...	...	...	...	...	...	...	...	...	...
Plaines Wilhems ...	3	17.5	8.5	32.3	1.6	14.4	...	...	...	...	...	...	...	...	...	...	1.2	14.0	.8	1.2	38.4	...	15.3	...	...	10.6	...	...	...	...	...
Mean	...	11.5	8.1	42.0	2.2	17.6	.5	.5	1.5	.7	37.1	2.8	1.7	.5	1.8	26.8	3.1	6.0	6.5	1.7	31.0	1.5	13.5	.5	...	14.0	...	...	...	...	...
Whole Crop																															
Pamplemousses ...	3	5.4	2.2	73.4	3.1	32.0	...	..	.4	.8	63.2	.4	.8	.6	.4	23.7	1.9	1.9	16 6	0.9	39.0	0.3	3.0	...	1.3	41.0	...	...	...	...	...
R. du Rempart ...	4	4.0	4.2	61.0	2.5	39.3	.4	2.2	.2	4.4	16.8	3.0	...	4 0	4.0	19.0	2.2	1.1	9.7	1.3	33.3	1.5	2.1	1.9	0.6	34.3	2.3	0.1	18.3	2.9	56.0
Flacq	6	9.3	3.7	50.0	2.3	13 8	1.5	.5	5.2	4.2	28.0	2.5	2.3	.1	4.9	32.3	1.6	1.6	1.6	1.6	33.6	...	..	...	...	...	...	...	...	...	...
Black River ...	1	3.1	3.1	50.9	3.1	22.1	...	...	.4	4.5	32.7	11.5	2.3	..	.7	28.4	4.7	0 3	1.1	1.3	30.2	...	...	...	...	...	...	...	...	...	...
Grand Port ...	9	11.3	12.5	43.9	2.6	14.6	.7	2.1	.3	6.5	34.5	2.8	3.7	.2	.3	23.0	6.8	5.6	1.4	2.4	31.8	1.8	1.8	...	...	22.7	...	...	...	...	...
Savanne	9	9.1	8 8	42.0	1.1	13.7	1.2	1.0	2.1	4.8	32.9	3.4	1.7	.7	2.0	24.0	2.2	0.2	2.8	1.7	28.8	6.0	8.0	2.0	...	24.0	...	...	...	...	...
Moka	3	2.1	7.5	30.5	1.9	16.4	...	...	...	...	...	...	...	...	...	...	3.0	6.5	1.9	0.7	20.7	...	...	...	...	...	...	...	...	...	...
Plaines Wilhems ...	3	14.5	9.2	24.7	2.6	16.4	2.9	2.6	3.9	3.9	24.7	11.0	9.0	...	1.0	4.0	4 3	11.2	1 8	1.4	33.2	...	15.3	...	...	10.6	...	...	...	...	...
General Mean ...	...	8.8	8.0	45.	2.1	17.0	1.1	1 2	2 2	4.5	31.7	2.9	2.2	.6	2.1	25.9	4.0	4.4	4.4	1.6	31.9	1.2	3.6	0.9	.6	31.2	2.3	0.1	18.3	2.9	56.0
Mean for 1928 ...	...	6.4	8.0	...	2.5	8.0	1.0	1.5	...	6.6	16.5	4.6	2.9	...	2.9	12.4	4.6	1.8	...	0.8	9.4	...	...	...	...	...	...	...	...	...	...
Mean for 1927 ...	...	18.4		...	7.1	...	3.5		...	8.3	...	9·		...	4.5	...	11.5		...	7.5	...	...	...	...	...	...	...	...	...	...	...

APPENDIX III.

DISTRIBUTION OF SUGAR CANE DISEASES IN MAURITIUS IN 1930
(Other than those listed in Appendix II.)

District	Pineapple disease	Smut	Root disease	Streak
Pamplemousses	None reported	Two estates Varieties affected : M. 131, Dk. 74, D.109	None reported	None reported
R. du Rempart	None reported	Three estates Varieties affected : RP. 8, M. 131, DK. 74	None reported	Two estates Variety affected : RP. 8
Flacq ...	One estate ...	None reported	None reported	One estate Variety affected : RP. 8
Black River ...	None reported	Two estates Varieties affected : RP. 8, M. 131	One estate Variety affected : M. 55	One estate Variety affected : RP. 8
Grand Port ...	Two estates ...	One estate Variety affected : P.O.J. 213	One estate Variety affected : P.O.J. 213	None reported
Savanne ...	None reported	None reported	None reported	One estate Variety affected : RP. 8
Moka ...	None reported	None reported	None reported	...
Plaines Wilhems	One estate ...	...	Two estates Varieties affected ; Uba, White Tanna P.O.J. 213	...

DEPARTMENT OF AGRICULTURE,

SUGARCANE RESEARCH STATION AND COLLEGE OF AGRICULTURE

STAFF

Director		A. G. G. Hill (Acting)
Sugarcane Research Station:		
Senior Geneticist		A. G. G. Hill, B.A., B. Agr. (Dublin), A.R.C.Sc. (Ireland)
Bio-Chemist		N. Craig, M.Sc. (Durham)
Physiological Botanist...		*Vacant*
Cane Breeding Officer...		A. de Sornay
Scientific Assistant		P. Halais
,, ...		G. Mazery
,, ...		A. d'Emmerez de Charmoy
Clerk		E. Gérard
Entomological Division:		
Entomologist		*Vacant*
Assistant Entomologist		A. Moutia
Scientific Assistant		J. Vinson
Chief Phytalus Officer...		A. Delord
Officers i/c Phytalus Destruction	Pamplemousses	P. Ribet
	(Moka-Flacq)...	P. Régnard
	Savanne...	R. Maurel
Assistants		R. de Robillard J. Wootun R. Prayag
Botanical Division:		
Botanist and Mycologist		E. F. S. Sepherd, B.S.A. (Mc Gill)
Plant Inspector		G. Orian
Chemical Division:		
Assistant Chemist		R. Lincoln, B.A. (Cantab)
Senior Scientific Assistant		F. Berchon
Junior Scientific Assistant		R. Rivalland
Sugar Technology Division:		
Technologist		L. Baissac, F.C.S.
Assistant Technologist		R. Avice, A.R.T.C.
Statistical Division:		
Statistician		M. Kœnig, A. Inst. P.
Veterinary Division:		
Veterinary Surgeon		F. E. Lionnet, Ec. Vet. (Alfort)
Senior Stock Inspector		Y. Leféburc
Assistant Stock Inspectors ...		W. Haddon E. Cartier T. Rivalland
Government Dairy:		
Officer in charge		Y. Lefébure
Overseer		S. Nunkoo
Tobacco Division:		
Government Tobacco Officer		G. Corbett
Supervisor Grading Warehouse		P. Dupavillon
Instructors...		R. Pilot and T. Manrakhan
Agricultural Division;		
Senior Agricultural Officer		C. A. O'Connor
Irrigation Officer		E. Lesur
Assistant Agricultural Officer		A. Valasois, F.R.H.S., Cert. Hort. (Reading)
Assistant Agricultural Instructors ...		E. Bedsy G. Bauristhene J. Duhamel
Overseers		F. Leclerc M. Valaythen B. Emmanuel D. Ramphul C. Boolkah
Assistant Overseers		D. Kissoonah A. Villars E. Beeputh

Farm School:	
Lecturer	A. Valasois, F.R.H.S., Cert. Hort. (Reading)
Overseer	G. Goder
Co-operative Credit Societies:	
Registrar	A. G. G. Hill (Acting)
Assistant	C. A. O'Connor
Inspector	M. Burrenchobay
Rodrigues:	
Agricultural Superintendent	R. Jauffret (Acting)
Overseer	S. Oree
Clerical Division:	
Chief Clerk	E. Grégoire
Financial Clerk	E. Emile
Correspondence Clerk	W. Bourdet
Clerks	I. Félix and R. S. Buguth
Librarian	G. H. Urruty
Store Clerk	D. J. Valadon

COLLEGE OF AGRICULTURE

Principal	A. G. G. Hill (Acting)
Registrar	M. Kœnig
Lecturers	A. G. G. Hill, L. Baissac F. E. Lionnet, M. Kœnig E. F. S. Shepherd C. A. O'Connor R. Lincoln J. H. Nicolin Y. Lefebure, R. Avice, A. Moutia, F. Berchon,
Clerk	E. Gérard

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